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MILITARY PRIZE ESSAY.

THE MILITARY ORGANIZATION BEST ADAPTED FOR IMPERIAL NEEDS.

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"Beware in time."

Author's Note.—The writer of this Essay made, 20 years ago, in a paper published at the time, proposals for a Military Organization based generally on the same principles as those proposed in this Essay. The only, or at least the principal, difference was that he proposed then that the term of service with the colours should be 1½ years for infantry and longer periods for other branches of the service.

The following are the books from which the notes on history, &c., have been derived:—"Gentleman's Magazine," 1756, &c.; "Hallam's Constitutional History;" "Macaulay's Essays;" "Alison's History of Europe;" "Russell's Modern Europe."

The statistics quoted have been partly from the above works and partly from the Army Estimates for the current year, and from the Annual Return of the Army for 1891.

The figures as to the relative strength of the Navy and Army for the years 1801 and 1813 are taken—for the Navy, from James's "Naval History;" and for the Army, from a "Comparative Statement of the Military Forces and Population of the British Empire, for every year since 1801," prepared at the Topographical Branch of the War Office.

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CHAPTER I.—*The Reasons of the Apathy of Englishmen as to Military Organization.*

THERE is perhaps no point in the history of our times that will more exercise the minds of future historians of Europe than the incapacity of the present generation of Englishmen to strike out for

themselves a military organization suited to the wants of their Empire. It cannot be said for them that they are without guidance from the events of the previous history of their country. Up to within the last thirty or forty years England held a prominent place among the military powers of Europe, and she had been so reckoned for some 150 years. It is true that her strength as a military power was somewhat overshadowed by her supremacy as a naval power; but that she held a high place among the nations strong for offence or defence on land is indisputable. Marlborough and Wellington have been in the first rank of European generals; indeed it is a question whether, after Napoleon and Frederick, they have not been at the head of the first rank. English soldiers can claim that in Continental warfare they have suffered fewer defeats in comparison with the victories they have gained than any other European army; and they can claim that while they have largely or mainly contributed to win victories like Blenheim and like Waterloo, they have suffered no crushing defeat like Jena, or like Austerlitz, or like Friedland, or like Sedan; while within the present century it was a soldiers' and not a sailors' victory that gave England for forty years the leading place among the nations of Europe.

But if there could be anything more astonishing than the present incapacity of the English nation to work out for itself a military system suited to modern requirements, it would be the still more astonishing fact that the country seems calmly to acquiesce in its present, by comparison, military impotence. Our fathers and our grandfathers looked upon the English Army as a factor fit to be called upon at any time to take an important share in either maintaining or altering the face of Europe. We, on the other hand, of the present day, are told by foreigners that the English Army is for all Continental warfare to be reckoned as a *quantité négligeable*; and, strange to say, we accept the opinion without objection and without protest; stranger still, we resign ourselves helplessly to this state of things and admit that it is by our Navy, and our Navy alone, that we must stand or fall.

That this apathy is new has been already stated; that it is most dangerous it is not difficult to show. Its fruits have already been frequently apparent. We are bound by Treaty obligations to maintain the independence of Belgium; many Englishmen declare openly that we should from military weakness make no effort to fulfil what we have undertaken. We desire to extend the scope of our commercial interests by occupying new territory in Africa; we desire to maintain our communications with India and our Colonies; we desire to prevent other powers from ousting us from territories where our commercial interests have been already established; we desire to prevent other powers from establishing monopolies of their own trade in foreign lands to the detriment of ours; but as soon as any direct action is necessary to carry those desires into effect we shrink back in helpless alarm, and are told by the newspapers, and even by responsible statesmen, that the military strength of the Empire is already "strained to the cracking point." On the West Coast of

Africa, on the East Coast of Africa, in Egypt, in India, in Newfoundland, while every other power is putting forward to our detriment every claim, just or unjust, which it thinks it can make with any chance of success, our Foreign Office, our India Office, our Colonial Office, are at their wits' end how best to stave off—feebly, and admittedly only for the time—every pressure brought to bear upon them by other countries essentially far weaker in all the conditions which lead to successful warfare, provided those conditions were properly taken advantage of. And why? Simply because we ourselves—not our enemies, but we ourselves—say openly that we have insufficient power, not merely for extending our Empire or our trade, but actually for maintaining the Empire and the trade which are already ours.

It is interesting to inquire what are the reasons for this great change in the position of Great Britain among the powers of the world,—the change, namely, from being the boldest to being the most hesitating and vacillating, from being the most enterprising in advancing her commercial interests to being the most feeble. It cannot be the want of men, for her population, since she fought single-handed many or most of the countries of Europe, has increased in a proportion much greater than that of her neighbours; it cannot be the want of money, for her wealth has increased in a proportion much greater than even her population.

I believe that the reasons lie partly with the country itself, partly with the administrative Government of the country as a whole, and partly with that section of the Government which is responsible for the military administration.

The country has become too rich, and with its riches has come selfishness, and with its selfishness want of true patriotism. That the great body of the people is far better off, is better housed, better clothed, better fed, than their ancestors is unquestionable. But that they are more restive under taxation is equally unquestionable. It may be true that the evil of party strife exaggerates the difficulty of taxation, but if the feeling of the country were sound this would have comparatively little effect. The truth seems to be that money and the objects to be attained through money, namely, greater comforts and greater luxuries, have now a higher value in the eyes of Englishmen than they formerly had. Take for example the case of taxation. Compared with Continental countries the taxation of England can only be described as extremely moderate. The average incomes of the people of France and Germany are notoriously far below the average incomes of the people of England. Yet France raises annually the enormous revenue of £126,000,000, and has within the last twenty-two years spent an average annual amount of £28,000,000 upon her Army. Germany, the poorest country of the three, raises a revenue of about £80,000,000 a year, and proposes in the future to spend some £20,000,000 a year upon her Army. England, the wealthiest country of the three, raises a revenue of about £90,000,000, of which about £17,500,000 goes to the cost of her Army. Yet, when some new tax is proposed, such as the "wheel tax" of some

years ago, there arises a clamour from the particular class affected, quite irrespective of whether the tax is just or unjust, and merely because the class objects to all taxation. So also if a remission of taxation is proposed, the clamour for relief is universal, and quite irrespective of whether the class claiming to be relieved has any just claim to the relief. So also if public money has to be disposed of, there is immediately a rush from all sides to the Exchequer for a share of the plunder. Class attacks class, profession attacks profession, trade attacks trade, from sheer selfishness only and to enable one class, profession, or trade, to pay less or receive more than some other class, profession, or trade. It is the same even with the members of those professions and those trades which are employed in the service of the country itself. It may fairly be questioned whether their efficiency is greater than, if indeed it is equal to, that of their predecessors. What is certain is that their regard for their emoluments, their desire for higher pay, their desire for less work, are far greater than in the case of their predecessors. Soldiers, sailors, Civil Service clerks, postmen, excisemen, policemen all have the one quality in common, that they are at all times agitating for more pay; and, what is much worse, the form their agitation takes is, just as often as not, ruinous to all discipline and to the efficiency with which the public service is carried out. Nothing is now more common than that a body of public servants should combine to introduce in this country the most dangerous form of election bribery. Pressure is brought to bear on Parliamentary candidates to use their influence to obtain higher pay or other advantages for public servants who have votes in a constituency. If they yield to the pressure, which they are only too likely to do, they are guilty of the meanest description of bribery. Those of our forefathers who sought seats in Parliament bribed at their own risk and with their own money. The modern candidate who stands for a constituency largely composed of public servants has every temptation put in his way to bribe with the money of the general taxpayer. When such cases as these occur, it is not possible to throw stones at the more humble artisan or miner, when he enters upon a possibly calamitous strike with a view to retain or to increase his daily wage. The course he takes is at least honest, inasmuch as a certain amount of discomfort and risk to himself personally is involved. But in his case as in the others, the general interests of the country are entirely ignored; his whole attention is permanently directed to his own personal emoluments, and those only.

It is only natural that this craving for more money, for being paid more and for paying less, should be coincident with a decline of patriotism. History has always proved this to be the case. Everything is judged solely by what will be the immediate pecuniary result to the individual; the general policy and general interests of the country are entirely overlooked and disregarded. On this point also a comparison of the England of the present day with Continental countries is by no means to the advantage of the former. Take France. The French press and the lower-class Frenchman are

rabidly patriotic. A French ministry which surrendered a just claim or a colony in the most remote part of the world would be at once hurled from power with little prospect of ever regaining it. If an English ministry acted in the same way there would no doubt be a party cry raised against them, but their Parliamentary majority would probably be in no way affected; and at the next general election the question of whether they would or would not remain in power would probably be determined according as they might or might not be able to offer some material bribe to the constituencies. Their action as to colonial or foreign affairs would have little or no effect on the result. Similarly if two candidates for Parliament presented themselves to a constituency, one of whom proposed to hand over Malta to France, but was able to bring influence to bear upon adding to the material prosperity of the town or district, he would to a certainty be elected member in preference to the man who had no influence in local affairs but took his stand upon the maintenance of the Empire. The fact that without Gibraltar or Malta the country might run the risk of its trade being greatly damaged would not be appreciated or understood by the average country voter.

But although the nation itself is mainly at fault as to the apathy with which the national defences are regarded, yet there can be no doubt that successive Governments are to blame when they pander, as they generally do, to the sordid objections raised against incurring necessary expenditure for military purposes. The country looks to its statesmen to lead; and the point now in question is peculiarly one upon which it is the duty of Governments to lead. They alone have the means of being sufficiently aware of the numbers and efficiency of the hostile forces with which England may at any time have to deal; and to them the country may fairly look to propose a sufficient strength on our side to meet those forces. The recent strengthening of the Navy by a Conservative Government is an instance—unfortunately a rare and exceptional one—in which the administration acted in the interests of the nation without much pressure from without. Even party malignity has been unable to find much fault with the action thus taken. There is little doubt that if their successors now in office initiated and carried out a well-considered scheme for increasing the military strength of the country without unduly or unnecessarily adding to the cost, their action would be received not only with toleration but even with gratitude.

As in the case of the people of England generally, so also in the case of the English Government, the apathy shown as to national defence is in marked contrast to the action taken by the Governments of European Continental powers. The latter never hesitate to propose any expenditure they may deem necessary or desirable. In the case of France, indeed, the action of its Government can only be considered to point in the direction of preparation for attack, and not merely for defence. A country which deliberately faces an annual deficit of £2,000,000 cannot avoid coming under this suspicion. Its enormous military expenditure may be held to be justified by fear of attack from Germany. Not so with its naval expenditure. The French

Navy is far superior to that of any other Continental power,—and it can be only with reference to the naval strength of England that the expenditure on the French Navy is regulated. But England is notoriously a non-aggressive power. The extravagant expenditure by France on its Navy must therefore be either pure waste or must be intended for aggression. Yet the numerous French Governments which have existed since 1870 have all uniformly proceeded on the same lines, and have all without scruple called upon their country to endure burdens which no English Government would have ventured to propose in the case of England. The Governments of Germany, Austria, and Italy have, under the pressure of necessity no doubt, but still without hesitation, followed the lead of France. The Government of England tardily acknowledged the existence of a serious national danger by a recent increase of her fleet; but still, although by far more able to sustain the burden than any Continental power, takes no steps to place her military strength for defence on a satisfactory footing.

But although the nation itself, and the Government as a whole, are no doubt mainly to blame for the want of a military organization suitable to the requirements of the country, yet it is impossible to acquit of blame that section of the Government which is more immediately responsible for military administration. It is twenty years since the nation became fully sensible of its military weakness, as compared with the strength of other European powers. An era of so-called military reforms was then inaugurated. The whole history of these "reforms" is a history of vacillation and change, with little improvement in our real strength, or, at least, an improvement far less in proportion than the increase which has taken place in Army expenditure. It is easy to say, and it is often said, that the strength of the Army entirely depends on the money voted by Parliament. This is by no means necessarily true, and the country does not believe it to be true. A great deal depends upon the way in which the money granted by Parliament is spent. It is an unfortunate fact that the country does not believe that, in spite of the numerous "reforms" which have been carried out, the strength of the Army has increased in proportion to the increase of expenditure; and the military administration cannot expect to be relieved of the blame which naturally results from this state of things.

The first and most important objection to what has been done since 1870 is that it has been entirely haphazard. No scheme of Army organization or of Army strength has ever been laid down, much less followed up and carried out. Yet so long ago as January, 1871, Earl Russell in a letter to "The Times" defined the objects for which England requires military strength.

They were:—

1. The United Kingdom should be defended against invasion.

2. The colonies and dependencies of the United Kingdom should be protected by our naval and military forces against a foreign enemy.

3. The engagements of the Crown and of our country with foreign powers should be fulfilled.

4. When our honour or our interests are deeply involved in some national dispute, they should be firmly maintained.

No attempt has ever been made by our Army administration to lay down clearly for the information of the country what military strength would, as a minimum, be necessary to carry out those objects, or to devise any scheme which would at a moderate cost bring the Army up to the strength required.

The system actually adopted certainly had the merit of simplicity. It consisted in tacking on a nominal system of short service to the conditions of English Army service. Short service had been in 1870 found a success in the German Army, which had to provide no Indian or colonial garrisons, and had to engage in no little wars. It was therefore considered necessary to adopt some imitation of it for the English Army, half of which served in India and the Colonies, and which had to furnish men for a little war every few years. The result has naturally been a hybrid system which neither fulfils the objects of a real short-service system, nor supplies, as our old Army did, a sufficient number of men fit at once to take the field on minor expeditions. Nor has the numerical result been at all commensurate with the additional cost. In 1870 we had in England some 105,000 Regular Troops, nearly all of whom were fit for immediate active service. We have now about 104,000 men with the colours, with about 69,000 in the Reserve. If the Reserves were called up we should thus have about 173,000 men. But admittedly at least half the strength with the colours, or about 50,000, are unfit from immature age to take the field, and the real strength of our first line is thus only some 123,000 men, or about 18,000 more than in 1870, while the Army Estimates have in the meantime increased by some two or three millions. The unpractical methods of our Army administration continue down even to the present day. "Army Corps" are successively kept in readiness for foreign service in case of war, and are numbered first, second, and so on. "Mobilization schemes" for home defence are successively brought out. On only two occasions since 1815—the Crimean War and the Indian Mutiny—have the military requirements of Great Britain for active service reached the number of an Army Corps, and in the case of the latter the organization of an Army Corps for service in India would have been quite unsuitable; while in the case of a European war with a country like France or Russia, the Army Corps arrangements would have to be at once upset by that reinforcement of our Colonial garrisons which would have to be the first military step to be taken. They would also be entirely upset by the not uncommon occurrence of one of our "Little Wars."

It is impossible under these circumstances to feel surprised that the country is dissatisfied with its military administration for the last 20 years. It has seen a considerable increase to the Army Estimates, accompanied by attenuated home-service battalions, composed of immature youths; it has seen on more than one occasion the permanent unreadiness of the Army for minor war operations actually exposed; and it is aware that the numbers of men in

Reserve are entirely inadequate to form what would even be a sufficiently strong first line for military offence or defence in case of a great European war. There can be no doubt that this distrust in the capacity of its military administration has led to considerable hesitation on the part of the country in sanctioning any addition to military expenditure. Theoretical "Mobilization Schemes" and hypothetical "Army Corps" add nothing to the real defensive power of the Empire.

CHAPTER II.—*The relative Strength and Functions of the Sea and Land Forces of England.*

It has been indicated in the last chapter that the true way to work out a military system adapted to the requirements of the British Empire is first to lay down the objects to be attained, and then to devise a system which would best attain those objects at the smallest additional cost.

There has, however, recently come into prominence in the country a new theory, which seems to lay down the principle that little or no military strength is required by Great Britain at all; that ships are our only effective defences; that armies and what are called "fixed defences," or, in other words, fortifications, are comparatively of no value; and that if our naval power collapses or is even temporarily eclipsed, further resistance is hopeless, and Great Britain may at once surrender her Empire; the natural conclusion of this argument being that instead of adding to or even keeping up the present expenditure on her Army, the country should double or even treble her fleet. It is necessary, therefore, before entering on any discussion of the best steps to be taken for increasing or organizing our military forces that this argument should be dealt with.

It is based primarily on the assertion, which its advocates take for granted, that if the English fleet is destroyed the country must be starved out. It may be answered that in the first place the assumption is a most improbable one; and that in the second place the conclusion can by no means be admitted.

As to the assumption that the English fleets can be destroyed, or even that they can be so much weakened as to allow an enemy to close all the English ports, it is surely only necessary to point out that even after, in the early part of this century, the French Navy had been driven from the seas and the naval supremacy of England had been established beyond dispute, yet at no time was it possible for the English Navy to prevent large numbers of French vessels from entering or leaving French harbours. If effective blockades were difficult then, they are in these days of steam impossible now. The assumption that Great Britain would be starved out, therefore, implies that it would be possible for from 2,000 to 3,000 miles of coast line to be guarded so that no food could pass through to a country in which, after being landed, it could be distributed by a network of railways. All the fleets of the world would be insufficient to carry out such an operation. That there would be hardship is

undoubtedly true; whether the people would have the necessary endurance and tenacity to continue at war under such circumstances may, as was indicated in the earlier part of this paper, be doubtful; but it is certain that if the same endurance and the same tenacity belong to the present generation of Englishmen as belonged to their ancestors of 100 years ago, no amount of naval power on the part of their enemies could "starve them out," so long as money remained in the country to buy imported food. That money would be required is no doubt true; but of that, so long as the military defences on land could be maintained, there should be plenty available, and so long as money, and mechanical skill, and coal and iron remain in England, not only the provision of the necessary food, but the recovery of her naval strength, should be perfectly within her capacity. If not, nothing could save her from defeat, humiliation, and impoverishment under any circumstances; her people must have lost their old fighting qualities. One weak element in this theory of "starving out" is that if it is possible to imagine that the present fleet of England, which is admittedly superior to that of any other country, could be so utterly destroyed as to admit of a continuous blockade round all her coasts, it is equally possible to imagine that a doubled fleet would meet the same fate; for it is manifest that a catastrophe of this kind could only befal ships inferior as a class, or men inferior as a class; and it would be of comparatively little consequence to an enemy whether he had to destroy half or the whole of this inferior *matériel* and *personnel*. He would then have the advantage of finding the English coasts stripped of military defences in order to double the strength of the Navy, and of being able to march into London with no one to bar his approach; an operation which even "The Times" must admit would be more decisive and rapid than the starvation of England by blockade.

I do not, however, wish to be misunderstood. That the Navy must be the first element in the defences of an insular country goes without saying; but that any country can remain great without land forces and fortified points is refuted by all the teachings of history, ancient and modern. Greatness supported only by power at sea can never be anything but unstable and ephemeral.

Of this fact, Carthage, and the States of ancient Greece, are undoubted examples, but it is unnecessary to go back so far as ancient history for the necessary proofs. They are amply supplied by the history of modern communities.

In the middle ages the earliest examples are the commercial States of Italy.

Pisa was the leading commercial power in the Mediterranean in the thirteenth century. She established herself on land in the Balearic Isles, Sardinia, Corsica, and Elba. But in 1284 her Navy was destroyed by Genoa in the battle off Meloria. Thenceforward her power both on sea and land declined, and the city itself ultimately fell under the yoke of powers which had the control of stronger land forces.

To Pisa succeeded Genoa, the leading naval power of the earlier

part of the fourteenth century. She established herself in Corsica. In 1261 she acquired and fortified Galata, a suburb of Constantinople, expelling Pisa and Venice, and commanding from this post the whole trade of the Bosphorus and Black Sea. Towards the end of the thirteenth century she defeated in the Sea of Marmora the combined fleets of Venice, the Catalans, and Greece; but a century later she was defeated in attempting a blockade of Venice, and thenceforward her power declined. Her fortified colony of Galata fell with Constantinople to the Turks in 1453. The helplessness of sea power unsupported by land forces was in this case illustrated. During the siege of Constantinople the Genoese defeated the Turkish fleet at the entrance of the Bosphorus; but their sea victory was fruitless to postpone the fall of Galata to the Turkish land Army. By 1500 Genoa itself had fallen into the hands of France.

Venice succeeded Genoa as the leading naval and commercial power of the Mediterranean and the Levant. This famous community first rose into prominence in the thirteenth century. She established herself at numerous points on the eastern shores of the Mediterranean, from which she controlled the commerce passing from Asia to the western countries of Europe. Until the middle of the fourteenth century she had no land territory in Italy; but by 1404 she had acquired Padua, Verona, and Vicenza, and by 1508 her land possessions extended from the Lake of Como to the middle of Dalmatia; but in 1509 she was entirely dispossessed of these by a combination of land powers, including the Pope, the Emperor, France, and Spain. From the fifteenth century her power declined, and, although she maintained a long struggle for her Mediterranean possessions with the Turks, the combined land and sea forces at the disposal of the latter brought about the inevitable result of her ultimate expulsion. With the loss of her colonies her commerce decayed, and Venice itself fell ultimately at various periods into the hands of France, Austria, and now of Italy.

The one point common to all these commercial and naval communities of Italy is that they had no land power capable of supporting their sea power; and they all thus ultimately had to succumb to nations which were stronger on land. Even at the most splendid periods of their history they were dependent for land defence on mercenary troops. Personal military service by the native members of the States was commuted for money payments, which the wealth obtained by commerce enabled the population to endure; but the principle of entrusting national defence to foreigners must always have the same result as followed in the case of these Italian States. Their navies secured their commerce, and added immensely to their wealth, but could not, unsupported by land strength, either permanently retain that commerce or that wealth, or even preserve the independence of the communities to which they belonged.

The history of Spain teaches the same lesson. At the end of the sixteenth century Spain was the leading power of Europe. The Empire of Philip II extended over great part of Europe, and his fleet was, before the despatch of the Armada, superior to that of any other

country. Macaulay thus describes the origin of the ascendency of Spain at this period ("War of the Succession in Spain"):—

"The ascendency which Spain then had in Europe was, in one sense, well deserved. It was an ascendency which had been gained by unquestioned superiority in all the arts of policy and war. In the sixteenth century, Italy was not more decidedly the land of the fine arts, Germany was not more decidedly the land of bold theological speculation, than Spain was the land of statesmen and of soldiers. The character which Virgil had ascribed to his countrymen might have been claimed by the grave and haughty chiefs who surrounded the grave of Ferdinand the Catholic and of his immediate successors. That majestic art—*premere imperio populos*—was not better understood by the Romans in the proudest days of their Republic than by Gonsalvo and Ximenes, Cortes and Alva. The skill of the Spanish diplomatists was renowned through Europe. In England the name of Gondomar is still remembered. The sovereign nation was unrivalled both in regular and irregular warfare. The impetuous chivalry of France, the serried phalanx of Switzerland, were alike found wanting when brought face to face with the Spanish Infantry."

Spain then had a standing army of 50,000 troops, a number greatly in excess of the land strength of any other European country. But during the seventeenth century her power on land rapidly declined. She lost a great part of her European territory; and, in 1703, French, English, and German armies were contending for the mastery in the heart of her kingdom. Soon after, she lost Gibraltar and Minorca to England. Yet, although her land strength had disappeared, her power at sea remained considerable for another century. At the beginning of this century Napoleon valued alliance with Spain as a naval power. Nevertheless, she had never been reckoned as a first-class European power since her land strength practically disappeared some 200 years ago; and with the loss of her principal Colonies her wealth and her commerce have been mainly transferred to other nations.

But it is not necessary even to go to foreign countries for proof of the fact that strength on land is a necessity of the existence of a power of the first class. The history of England itself teaches the lesson perhaps more effectively than that of any other country. The long struggle between England and France for empire both on land and sea may be said to have seriously begun in 1756, and to have continued with various breaks until 1815. The first period of war lasted some six years, from 1756 to 1762. When it began, the Navy of Great Britain cost some $3\frac{1}{2}$ millions annually, while the Army cost only some $2\frac{1}{2}$ millions. By 1760 the cost of the Army had risen to about 6 millions, while that of the Navy was only between 4 and 5: that is, the proportion of cost and strength between the sea and the land forces had been during those years practically reversed. Yet these figures take no account of the subsidies granted to European powers for their assistance in maintaining the struggle on land with France, and which, therefore, form essentially a part of England's

military expenditure. The period was probably the most glorious in English history. The whole power of the nation was directed by the ablest War Minister who has, since the days of Cromwell, appeared in English history; and the energies of the elder Pitt were, like those of Cromwell, directed as much (if not more) to the development of the land strength of the country as of its naval strength. France was driven by English troops from North America; her power in India was shattered; her Colonies in the West Indies were without exception attacked, and were in most cases subdued; Spain was driven from Portugal, and her Colonies of Manilla in the East Indies, and of Havanna in the West Indies were occupied. It is true that all this could not have been effected without successful naval warfare; but it is equally true that in every case success was attained by combined land and sea operations, and that without a powerful Army the victories at sea of Hawke, Boscawen, and Rodney would have been absolutely barren.

The second period of the great struggle with France dates from 1776 to 1783. The great War Minister of 20 years earlier was no longer in the height of his power or of his vigour. The fatal element of incompetence at the head-quarters of the country and in the direction of its affairs intervened. French and Spanish fleets rode in the Channel. English armies surrendered to their own kinsmen in America, and a great and powerful confederation of English Colonies broke away from the mother country. Minorca fell after a six months' siege; France attacked, although not with uniform success, the insufficient English garrisons in the West Indies; while the victories of Rodney at sea, the successful defence of Gibraltar by Eliott on land, and the operations of Sir Eyre Coote in India are the only relieving points in a long series of failures; and these occurred only towards the end of a war generally calamitous to England. The reverses thus sustained have been attributed solely to a decline of sea-power; it would be far more just and far more true to attribute them to a contingency to which every country has been and will be liable; to the temporary incompetence, namely, of the directing authority at head-quarters, and to the temporary incompetence or feebleness of its subordinate officers. For the failures were not at sea only, but equally, if not in a greater degree, on land also. The Admirals and Fleets of England, and the Generals and Armies of England, were successful or unsuccessful in this war entirely in proportion to the means provided for them from head-quarters and to their own competence or incompetence in employing them.

The last and most severe contest between England and France began in 1793, and may be considered, for all practical purposes, to have continued until 1815. The naval part of it practically closed in 1805, when the supremacy of England on sea was established at Trafalgar. If, as we are now told, sea-power alone is necessary to a country, there was no reason why, so far as England was concerned, the war with France should not have been at once closed after Nelson's victory. Her fleets commanded the seas, the home country was secure, she had only to guard her coasts with her Navy, and to

leave the Continental powers to settle their quarrels as they pleased. How differently our ancestors thought is clear from their course of action. During the years from 1805 to 1815 they expended enormous sums of money and the lives of many brave soldiers in aiding the Continental powers to destroy the land forces of Napoleon; and they never rested until that destruction was complete. As in the case of the war of fifty years earlier, the development of the military strength of the country during this war was far greater than the development of its naval strength. Yet the strength of the Navy was enormous. In 1809 there were 698 English ships in commission, with 130,000 seamen and marines—a naval force greater than the world had ever seen. The increases between 1801 and 1813 of the naval and military strength respectively are indicated by the following figures:—

English Navy.

Year.	Seamen and Marines.	Cruisers in Commission.	Naval Estimates.
			£
1801	135,000	472	16,577,000
1813	140,000	570	20,096,000

English Army.

Year.	English Regular Troops for General Service.	English Regular Troops for Colonial Service.	English Regular Troops for Service in India.	Foreign Troops.	Embodied Militia for Home Defence.	Total European Embodied Troops.	Military Expenditure.
							£
1801	154,000	3,000	23,000	13,290	70,650	263,940	20,316,000
1813	239,000	5,000	36,000	35,000	82,000	397,000	36,779,000

(The "Military Expenditure" of 1801 probably includes subsidies of £694,000; and that of 1813 subsidies of £11,294,216.)

Besides the above land forces there were in 1801 nearly 140,000, and in 1813 about 186,000, native Colonial and Indian troops in the service of the Empire.

By 1810 France had no Colony left in her possession, either in the West Indies, or in the Indian Ocean, or on the West Coast of Africa: in 1798 Minorca was captured by General Stuart, and in the same year Malta was blockaded by the British fleet. The latter is the only instance during the French wars of an important fortress being captured by naval operations only. But they lasted for two years, the place not having fallen until 1800.

It is clear from the above instances of British history, that our

ancestors at least cannot be claimed as advocates of the theory that naval power alone is sufficient for the maintenance of the British Empire. And their descendants of the present day can hardly say that they did not know how to make war; for England has ever since reaped the fruits of their efforts.

The evidence furnished by the history of the Italian States, of Spain, and of Great Britain itself, thus all points in one direction. The wealth which follows commerce, manufactures, and the possession of colonies, can only be obtained and retained by the maintenance of a powerful Navy. But naval power without land power can never have the element of permanence. It may exist for a time on sufferance; but if attacked it must be supported by a numerous and warlike native population, trained to warfare on land, depending as it does upon fixed points from which it can be protected or renewed in case of a reverse. If such points do not exist, or are not held in sufficient strength, a naval country has nothing to fall back upon while her fleets are being re-formed and reorganized, and the whole power of the country collapses. Nor can a struggle for existence between two powers be finally decided except on land. The naval strength of Napoleon was practically destroyed ten years before he finally succumbed to the combined land forces of the European powers. The fleets and wealth of England contributed largely, if not mainly, to his downfall; but, alone and unaided they could never have brought it about.

Chapter III.—*The Military Organization of the Empire should provide Greater Strength for Active Operations Abroad.*

In the previous two Chapters I have endeavoured to show,—

1. That before devising a satisfactory military organization it is necessary that the nation and its public servants should have a clear idea of the objects for which the organization is likely to be required.

2. That the wealth of nations is usually dependent mainly on the extent of their commerce, of their manufactures, and on their colonies or settlements abroad.

3. That the maintenance of the wealth of a nation is thus dependent on its possession of a powerful Navy; while on the other hand the existence of the Navy is dependent on the home country and its colonies or settlements abroad being strongly held as fixed points for its protection or support.

4. That therefore in the last resort powerful land forces must be the mainstay even of Naval powers.

I must here guard myself from its being supposed that in this paper it is advocated that England should keep up the enormous establishments of troops which the Continental powers now maintain. I believe she could do so if she pleased; her population has doubled since the close of the Napoleonic Wars, when it has been shown that she had nearly 400,000 European troops at her disposal for land warfare, while her wealth has increased in a much greater pro-

portion. She is far from being in the same position as the Italian Republics, which never had a sufficient native population of their own to support on land the widely extended fabric of commerce they had raised. But it is quite unnecessary, and would be an unjustifiable waste of money, that the land armaments of England should approach those of Germany, or Russia, or France. The power of her fleet must go for something. The Channel itself prevents her being overwhelmed, as France was in 1870, by half a million troops pouring across her frontier. There ought, therefore, to be no difficulty in a nation of some 38,000,000 population providing the comparatively moderate land strength she requires. The danger is, and always has been, that conscious as she is of being always fairly secure as to the power of her fleets and of a very moderate land force to maintain the safety of the kernel of the Empire—Great Britain itself—she neglects the necessity of providing for the security of those distant possessions which are as essential an element of her prosperity, and even of her existence as a great power, as the home country itself. For the essential distinction between the British Empire and the Continental powers of Europe, is that the foreign possessions of the latter are a luxury, while the foreign possessions of Great Britain are now a necessity to her. Without the commerce and manufactures which follow upon the possession of settlements abroad, her population could not exist. I have disclaimed belief in the fantastic theory that a foreign country could at once starve out Great Britain after a decisive naval victory. But it is impossible for any thinking man not to see that if the Colonies of Great Britain were wrested from her, and her foreign trade destroyed—an operation far more difficult and likely to be far more prolonged than several naval defeats—her population at home could not live. She must then yield to the enormous ransom which would undoubtedly be imposed, even although the shores of the United Kingdom might have been maintained intact. The mistake, therefore, which appears now to be made by the country is in not treating the defence of the Empire, as a whole, on exactly the same footing as the defence of the United Kingdom itself. The number of her troops available for the defence of the United Kingdom is probably sufficient for all reasonable requirements; the number of her troops available for the maintenance of her Empire abroad is miserably inadequate.

For it is useless to disguise the fact that the elements of strength which could be employed against our foreign possessions by our most probable enemy have vastly increased since 1815. We say our "most probable enemy" because France alone can be considered to be the country dangerous to the existence of Great Britain as one of the great powers of the world: and because the course she has been recently following as to armaments must, as has been already pointed out, be looked upon only as a distinct menace to England. The enormous augmentation of her Army may be justified by the rivalry with Germany; but the increase in her naval strength can only be justified by rivalry with Great Britain; and such rivalry in the case of a country burdened with an enormous debt of some

£1,300,000,000, and which imposes on its population an annual taxation far greater than that which Englishmen grumble at, cannot be considered as other than extremely dangerous. It is all the more dangerous that England has latterly adopted the principle of avoiding all alliances with other powers. She calls it "keeping free from foreign entanglements." This course may have its advantages; although, considering the previous history of this country and the present state of politics in Europe, it is not easy to see in what they consist. Germany, Austria, and Italy have adopted a different course, with the result that they are unassailable by France singly, and most formidable even against a combination of France and Russia, which are admittedly at the present time the only aggressive powers in Europe. If England had joined that alliance, the peace of Europe would surely stand far less chance of being disturbed than when, as now, she stands ostentatiously aloof from the other non-aggressive powers. On the principle that gunpowder in exploding follows the line of least resistance, there is far greater temptation for France to attack England than to attack any other power. Not only so, but the essential vulnerability of England is far greater than that of any other power. Her commerce, the widely extended nature of her Empire, her want of preparation for land warfare, involve the certainty that in a war with France, even singly, she would suffer more than her assailant; for the vital part of France, namely France itself, could not without alliances be attacked at all, while the vital part of England, her Colonies and her commerce, would not only be entirely assailable, but would be in great risk of being attacked with success.

I have said that the power of France for attacking England has greatly increased within the present century. In the last century the blockade of Toulon alone absorbed great part of the Navy of England, under her ablest admirals. France has now, in addition, established herself on the south coast of the Mediterranean, in Algeria and Tunis, flanking on both sides, instead of on one, our trade route to the East, and our communications with India. The *laches* which permitted such a state of things is inexcusable; the route to the East by the Mediterranean must inevitably in case of war be either greatly impeded or entirely stopped, and our trade throttled near its very source. A parallel case would be our attempting to march an English Army through Belgium to the Rhine, with a hostile French Army on one flank and a hostile Dutch Army on the other. Professions are put forward that the Tunis Harbour is not to be fortified. Such professions are futile. A strong French garrison could in a few weeks render the place impregnable against anything short of a regular siege by a large force. Cyprus is supposed to balance Biserta. We have held Cyprus for some 14 years, and it has as yet neither a harbour nor defences. We keep a half-battalion there, apparently for the sole purpose of giving France the triumph, on the outbreak of war, of capturing a few hundred British troops.

But it is not only in the Mediterranean that French power for

offensive warfare has increased. She holds posts in the West Indies from which she can assail our Colonies and fortified posts in the North Atlantic. On the West Coast of Africa she has established herself on the Senegal, on the Niger, and on the Congo. She has occupied the East African coast opposite Aden, holds several points in the Indian Ocean and in the South Pacific, while in the far East she has established powerful garrisons close to our trade route to China. All these settlements involve a heavy loss to her revenue, for none are in themselves profitable; but in case of war they would form valuable *points d'appui* for attacking English possessions and English commerce; and there can therefore be no injustice in the inference that, like the maintenance of her powerful Navy, the establishment and maintenance of these posts have been carried out by France solely with a view to an ultimate successful attack upon Great Britain.

It is often said, and it is no doubt the opinion of many Englishmen, that in establishing garrisons abroad France is merely giving so many hostages to England, as they must at once surrender to our superior Navy. There is a story that Lord Palmerston, or the English Foreign Minister of the day, some 50 years ago, when there was a dispute between the two countries, said that if war broke out France might "relieve herself of all anxiety for the future" about her colony in Algiers. There might have been some foundation for the saying then; it would be the merest brag now. To turn 50,000 French troops out of Algiers would be considerably beyond the power even of the English Navy. And to starve them out would be equally difficult.

Even in the old wars, when steam was unknown, and when the English fleets were far more powerful relatively than now, there was no period at which considerable French squadrons did not find means to enter and leave French harbours. If effective blockades were difficult then, they are impossible now. We are told that coal is a necessity for modern naval warfare, and that England alone has the power of supplying her fleets with coal at distant stations. But England has not a monopoly of the coal supply; before the outbreak of war it would be possible for any power to supply and store a large stock of coal; and, during the progress of the war, to renew it from coal-producing countries other than England. There are also neutral ports. Even if it were possible, which it is admitted not to be, for the English Navy to shut up all the harbours in France, and those in her Colonies or fortified posts abroad, the maintenance of such blockades would absorb so much of its strength as to leave the whole of British commerce at the mercy of a few hostile cruisers.

The truth is that the true policy of England, in reference to the foreign possessions of countries with which she may be at war, remains the same as it was in the days of our ancestors. The elder and the younger Pitt, however much they may have varied in capacity for carrying on war successfully, never varied in the policy of attacking and annexing the foreign possessions of an enemy. The results in the case of the various wars with France and Spain from

75 to 150 years ago have been already stated. By 1810 France had no colony left, and Spain had been deprived of those which it was possible to attack with success. Unfortunately Great Britain, in 1815, treated France with a magnanimity which has in some cases, such as the Newfoundland Fisheries, been badly returned. Many of her foreign possessions were restored to her at the end of the great war, and these she has since greatly added to. The work of attack would thus be far more formidable now than formerly; nevertheless, it would have to be undertaken. For, if not undertaken, in all probability the tables would be turned. Our Colonial possessions are notoriously too weakly garrisoned; it has been said that the blockade of small squadrons has now become impossible; and France would inevitably endeavour to utilize to the utmost her enormous preponderance over Great Britain in land forces. All these considerations point to the conclusion that, immediately on the outbreak of war, carefully-prepared expeditions would be despatched against every British outlying post the reduction of which would be within the bounds of possibility. And, under present conditions, it is impossible to say that in such warfare Great Britain would not suffer most serious injury, if she would not indeed be entirely crippled, at the very commencement of a war.

The inference, therefore, from these considerations is that it is not sufficient that Great Britain should have, as we are so often told, merely a small but thoroughly efficient Army. She wants numbers, as well as quality, at the very commencement of a great war; in the first place to double her colonial garrisons, in the second to form part of combined land and sea operations for the reduction of the colonial posts of the enemy. We have seen that her present effective strength of Regular troops at home can be reckoned, even including the Reserves, at only some 120,000 men. In case of war with France, not one man of these would be allowed to leave England, and our Colonies and posts abroad would be left to take care of themselves. The probable result cannot be described as other than fatal.

The first consideration, therefore, in devising a suitable organization for the English Army is that its strength should be immensely increased for active operations abroad. We have seen that Great Britain in 1813, towards the end of the great war with the French, had gradually raised the strength of her Army to 397,000 men. Of these, 82,000 were embodied Militia, available only for home defence. There were, therefore, 315,000 men available for the defence of the Empire abroad or for attack. She had then, however, advantages which she has not got now. Her Navy was supreme on the seas, and the Colonies and posts of France abroad had all been occupied. There were only 36,000 English troops in India; there have now to be 72,000. She was aided on the Continent by a powerful combination which diverted from England a great part of the attention of Napoleon, and much the greatest part of his land forces. It is, therefore, not unreasonable to assume that her strength should be not less, but more, than our grandfathers thought necessary towards the close of a successful war. Yet, including the European Army in India and

our European colonial garrisons, we are now satisfied with a total strength of only some 220,000 Regular troops (including Reserves, but excluding youths and depôts) available for the general defence of the Empire at home and abroad; and, excluding India, a total strength of only some 150,000 Regular troops for the defence of the rest of the Empire, including Great Britain itself.

Instead of "we are now satisfied" it would perhaps be more correct to say "we are now only provided" with the above forces; whatever may be the official view, recent discussions in the public press sufficiently indicate the uneasy feeling in the country on the subject.

CHAPTER IV.—*Defects of the Volunteers and Militia with reference to the Military Organization of the Country.*

It will no doubt be objected to the statement in the last Chapter of the effective land forces of Great Britain that no account is taken of the Volunteers and the Militia. The omission, was, however, a deliberate one. I believe that, should war with a great European power unfortunately break out, and should it be within the bounds of possibility that that power would have the means of invading England, the country itself would place no dependence whatever—at least at first—on the Volunteers and Militia; and, as has been already said, it would require every man of the Regular troops to be kept in readiness to resist possible invasion.

It is an invidious task to criticize the Volunteer force. The movement was, in its inception at least, a patriotic and meritorious one, and even now it serves a good object in promoting the physical training of the youth of Great Britain. But it is now, to say the least, doubtful whether the evils caused by it do not counterbalance the benefits it confers.

In the first place, the country in time of peace treats it as a trustworthy force, and makes it an excuse for not adding to the real defences of the kingdom; while in time of war it would as certainly, so long as it remained merely a Volunteer body, be treated as an untrustworthy force.

Its first defect is that it has no discipline, and indeed no imitation of discipline. It is not possible that men who are begged and not ordered to attend parades or drill can have anything of the nature of discipline; the mere fact that the request is made, and not the order given, is prejudicial to the very essence of discipline. The fair-weather discipline is no doubt good; it merely means that the men are generally respectable and well-behaved; and when they go out on Easter-tide marches, or to camps, or to field-days, there is no reason why they should do otherwise than maintain their usual character for good conduct for those few days. What the discipline would be under the tests of hardship, of poor fare for months, of perpetual vigilance before an enemy, is another matter altogether. And indeed there have been cases where under the pressure of even a few days of bad weather, and the consequent idleness, the usually good conduct of the men has broken down. In such cases the officers are, of

course, quite helpless. It is doubtful whether the fact that such a state of indiscipline exists in a force which claims to be really a body of soldiers does not react injuriously on the men of the Regular Army. The latter hear the indiscriminate praises now bestowed, sometimes by men in the highest military positions, upon the soldier-like qualities of the Volunteers; and it is not very surprising that they should sometimes consider themselves justified in adopting some of the methods of a force which can only be kept in existence by the "popularity" of its officers, and which has no scruple on occasions in indicating to an officer, in methods which would hardly meet acceptance in the German, or French, or Russian Armies, that he has not succeeded in meeting with their approval.

The second defect is that the important elements of cohesion and self-confidence must be entirely wanting in a Volunteer force. Men who are for all the main objects of their career civilians, whose parades and drills are merely a diversion and a change from their more serious pursuits, and who are only occasionally associated with their comrades, can never, when brought to the test of field service, get rid of the amateur feeling and treat fighting as their profession. Yet a scheme was inaugurated by the last War Minister for raising Volunteer batteries of Mounted Artillery—probably the duty which of all others requires the most thorough military training. No dependence could be placed on such a force.

The third defect is that most of the force would not be available, except possibly at enormous expense and by dislocating the business of the country, even for home defence. They could not practically be withdrawn from their civil employments as permanent garrisons of threatened points. If they were, large amounts for pay and compensation would have to be issued to them. On the other hand, if summoned to resist an invasion they would probably arrive too late; notice is hardly likely to be given by the enemy. Some corps consist of men who could not in time of war be withdrawn from their peace duties; the Post Office Volunteers and those of the Royal Arsenal, for instance, would probably have their civil work doubled in time of war. There are probably only two categories of Volunteers who could be really utilized for active service, namely, the London Volunteers and the corps who live in the seaport towns. They are on the spot, and their services can be utilized without withdrawing them from their civil work. The weaklings can be weeded out, and their training carried out with some approach to efficiency. It should, however, be made a *sine quâ non* that they should be placed under the Army Act for discipline. For there is no reason, but the contrary, why Volunteers should not, under proper discipline and training, be equal to or better than our present Regular troops; they are probably of a more intelligent class. But it is only mischievous to tell them that under present conditions they can properly rank as soldiers.

The fourth and most fatal defect of the Volunteer force is that it is not available for service abroad, or, in other words, for the general defence of the Empire. It is useless to dilate on this subject. It will have been seen, from the whole of the previous parts of this

paper, that it is considered that the main object of the military organization of this country ought to be to provide a force capable of defending our Colonies and posts abroad as effectively as the home country. For that purpose the Volunteer force, even if it were thoroughly efficient, would be useless under its present conditions of service.

On the whole, therefore, it seems to be unlikely that more than some 60,000 men out of the 220,000 belonging to the Volunteer force, could be utilized for home defence in time of war, and these should be employed behind the defensive works required for the defence of London, and of the seaports in or near which they reside. No confidence could be placed on them as a field force. Bull's Run, Chanzy's operations, those of Faidherbe, and Bourbaki's march across France, in the Franco-Prussian War; the Guerilla warfare in Spain; the Franc-tireur warfare in France—all prove beyond question that superiority of numbers and individual bravery avail nothing to undisciplined and partially-trained bodies of men against disciplined and fully-trained troops. At first sight the case of the American Army under Washington in the War of Independence, and the case of the French Revolutionary forces in 1792–93, would appear to be exceptions, but they are not really so. Washington's troops, or a great proportion of them, had been as fully trained for war as the English troops opposed to them, and they were far better led. For several years before the War of Independence broke out, the English Government had granted subsidies to the American colonists for service against the French and against their Indian neighbours, and Washington himself had received his military training in this way. As to the half-trained armies of France in 1792–93, they were never really fairly attacked by the forces opposed to them. Valmy in 1792 was merely a cannonade, yet the French officers had great difficulty in preventing their men from running away; and the German General, for political reasons, never really pushed his attack home. In 1793 the French levies were in the beginning of the year shut up in camps from inability to take the field; their opponents sat down to besiege Valenciennes and Condé instead of moving to the attack. Time was thus given for the necessary training, and the raw French troops of the Revolution developed into the victorious armies of Napoleon.

It is impossible, therefore, under present conditions to reckon the Volunteer force of Great Britain a part of the organization best suited to the needs of the Empire. General Sherman's description of the Union Army at the battle of Bull's Run exactly applies to the Volunteers of Great Britain: "We had good organization, good men, but no cohesion, no real discipline, no respect for authority, no real knowledge of war."[1]

The Militia is a more valuable force than the Volunteers. The men have had some experience of what is the first essential in the training of either officers or soldiers—namely, they have lived in

[1] General Sherman's "Memoirs."

barracks under discipline and the Army Act, and they have had a few months' continuous drill. They can also be embodied at any time before or immediately after a declaration of war; and when embodied they at once come under the Army Act and regular training. Their efficiency thereafter entirely depends on the length of this training. They would after six months probably be fit to be placed in line with Regular troops. Their defects are, therefore, two: first, they would not have training enough to be fit to take part in the defence of the Empire immediately after a declaration of war; and, secondly, they are not available for the defence of the Empire abroad.

Chapter V.—*The Proposed Military Organization.*

It remains to state what in the opinion of the writer, on the principles laid down above, should be "The Military Organization best adapted to Imperial needs."

Such an organization can only be founded on a real short-service system. Wealthy as England is, she could not endure the cost of the permanent embodiment of the number of men necessary for the defence of her Empire.

I have said that the present system is a hybrid system. A real short-service system is one under which men remain with the colours only long enough to receive the necessary training and then pass to the Reserve. It is quite incompatible with foreign or colonial service in time of peace.

The first necessity, therefore, is that the Indian and Colonial armies should be entirely dissociated from the home Training Army.

The separation of the Indian Army will no doubt be vigorously opposed by many. Twenty years ago the writer of this paper advocated this step as the first preliminary to establishing a real short-service system. There were then fewer advocates of it than there are now. It may, perhaps, ultimately be carried into effect as being in fact inevitable if the country is to have sufficient means for land offence and defence; the danger is that it may not be carried into effect until too late.

The reasons for the step are so manifest that it is extraordinary that we have taken 20 years to realize them. The first is the immense difficulty involved in recruiting men for Imperial service. For, so long as 40 years ago, the principle began to be established that the difficulty of recruiting is in direct proportion to the length of the term of enlistment. We began with the term of life service, and had to give it up. We fell back on 21 years' service, and had to give it up. We then adopted 12 years with the colours; and we have now, in general, the term of seven years with the colours and five in reserve, and shall have to give those conditions up. Englishmen of the present day will not commit themselves to periods of service which involve not only strict discipline but long periods of exile; at least, the majority will not. There will always be certain adventurous spirits who, if liberal conditions are offered to them, will

accept by choice a military career abroad; but such men, full-grown at least, are not numerous enough to supply the numbers we require even for our present establishments. Besides, the old traditions on the subject of enlistment have not yet died out among the class which furnishes our recruits. Forty years ago a man who "went for a soldier" was looked upon as having not only lost caste, but as being cut off for life from all his relatives and friends. Such impressions die hard, and it will take the strongest measures to get finally rid of them. That they should without unnecessary delay be got rid of is manifest. Their existence amounts to a national danger. For it is sufficiently clear that to soldiering, as soldiering, the class in question does not object. It takes to Volunteering with zeal and energy—a zeal and energy unfortunately turned into a wrong channel so far as the general defence of the Empire is concerned. The first and most essential method of getting rid of this feeling as to enlistment is to make the Indian Army a separate one. For at present every man who enlists into the Regular Army is liable to undergo, and most of them have to undergo, periods of exile and exposure to more or less unhealthy climates, and they are then mostly turned adrift at too mature an age to take kindly to a trade or other useful civil employment. Such men are spread all over the country. If, on the other hand, under a long-service system, the Indian Army were to be kept apart, only some 9,000 men would be required to recruit it, and these men would, after fulfilling the terms of their Army service, fall back into civil life provided with the pensions which they would have earned.

Nor when the difficulty comes to be really faced is it possible to see what insurmountable obstacle exists. India at present pays for her garrison, and on the same principle she should pay for her own recruiting. At present she no doubt does so in some form of money payment. But she does not pay and she cannot pay, because it cannot be represented by a mere money payment, for the weakness of the defences of the Empire as a whole, including that of India herself, caused by the difficulty of recruiting a sufficiently numerous Reserve. For the ultimate defence of India herself may collapse from want of power to reinforce her garrison from home. The cost of pensions would no doubt be greater for India under the conditions of a long-service "local" army; but that would be a perfectly fair tax upon the country. The principal objections that have been brought against a "local" Indian army are two—the medical objection and the objection on the score of discipline. Both objections would have to be removed by special measures. The term of service should not exceed 18 years, and the men should be brought home at the public cost for the sixth, twelfth, and eighteenth years of their service. They would thus have one year at home for every five years in India. That year might either be allowed entirely as furlough, or half on furlough and half on duty with the depôts. And the terms of service would have to be elastic. If a man wished to retire after the first five years' service he might be placed in reserve for the remainder of his 18 years' term; after 10 years he might go

to the reserve with a gratuity, or with a small pension, always on the condition that a limited number only could be allowed such a privilege. After 18 years, the last year being spent in England to allow of his obtaining employment, he would, of course, receive full pension. The men should have the same privileges as to hill stations as the officers. The above conditions would nearly assimilate the service of the men to that of the officers, and would probably be necessary in modern days to render Indian service attractive. They also ought to remove all the objections made to a local Indian Army on medical and disciplinary grounds. They would, of course, involve an increase to the present Indian establishment of one-fifth for the number of men who would be at home every sixth, twelfth, and eighteenth year of their service, or about 14,000 men in all, and an addition to the strength of some 3,000 or 4,000 men for depôts in England. The total strength of the Indian Army on such conditions would thus have to be about 90,000 men, with a small reserve of 15,000 or 20,000 men who might have been allowed to shorten their colour service on the conditions above stated. It can hardly be considered that even 110,000 men is too great a European army for a country like India to have at its disposal under the conditions of military strength which now hold good in countries like Russia. But the conditions of strength and cost of their "local" Army would be entirely for the consideration of the Indian Government. What is essential is that India should no longer be the main obstacle to the development of the armed strength of Great Britain for land warfare.

The next point is to separate our Colonial Army from our Training Army.

Our Colonial Army is here held to include the troops required for service in "Little Wars." It has been pointed out in the first chapter that the theoretical arrangements made by our present military administration for "Mobilization" and "Army Corps" are liable to be entirely upset by a "Little War." Only twice since 1815 has it been necessary for England to send abroad a force of the strength of an Army Corps. On the other hand we have had in the same period very many "Little Wars;" that is, for England great wars have been rare, while little wars have been numerous during this century. Our present organization does not provide at all for these little wars. We have either to call out the Reserves, or to break up our regiments and battalions, or to send out immature boys. To call up the Reserve for such paltry wars as we have had since the Indian Mutiny is nothing short of a gross breach of faith; it is a misuse of the English language to call such wars cases of "national emergency." If it is to be necessary to disturb our Reserve men on every such occasion, we cannot expect to keep a Reserve at all; the men could neither get nor keep employment. It would have to be clearly enacted by Parliament, if a real short-service system is introduced, that the men in Reserve should not be called out except in case of imminent danger of war with one or more of the great European powers, or with the United States.

It follows that some provision must be made to have in England a small force ready to be sent abroad in case of one of these small wars. Its numbers need hardly exceed 25,000 men.

There are also our peace garrisons in the Colonies. These amount, roughly, to 30,000 men.

Our Colonial Army would, therefore, include some 55,000 men. They would be enlisted for long service—18 years, as proposed for the Indian Army. The proportion serving abroad in peace time being 30,000 men to the 25,000 men kept at home for the contingency of a small war, the men would have on an average 8 years at home to 10 years abroad out of their 18 years' service, the two forces relieving each other. It would, however, be desirable that each unit should have only 5 years abroad continuously, being then brought home for 4 years. The conditions of service should probably be similar to those proposed for the Indian service, except that the 18 years' service would be continuous instead of being broken into three periods. The usual periods of furlough would, of course, be allowed; and, as in the case of the Indian Army, the terms of service should be elastic; that is, a certain proportion of the men, confined to a reasonable number, should be allowed to go, if they wish it, to a reserve at the end of the sixth and twelfth years of their service; full pension being reserved for those men only who complete their 18 years' service with the colours. The reserve to be limited to 10,000 men.

Probably not more than 6,000 recruits annually would be required for this force.

It might be a question later on whether that number of men might not be allowed to volunteer for the Colonial Army after having completed their 2 years' service in the Training Army; but the necessity of breaking through the ideas now current about enlistment, and the danger that it might be desired to allow volunteers from the Imperial Reserve to go to the Indian Army as well as the Colonial, appear to afford strong reasons for keeping the Training Army and its Reserve entirely on home service—certainly for some time—and allowing no volunteers from it to the long-service armies.

It remains to provide for the most important part of the whole organization, namely, the Training Army and its Reserve.

It is proposed that a minimum force should first be fixed as what is absolutely necessary for the defensive and offensive operations which Great Britain would have to carry out in case of war with a great European power like France. This would be for the Government of the country to decide. The following strength is suggested merely as an instance, and as a basis for a rough estimate of the numbers of men who would have to be provided for the Training Army; of what numbers would in consequence pass into the Reserve; and of what would approximately be the cost of the whole, on the conditions above stated.

Requirements for War.

	Men.
For home defence of the United Kingdom—Field Army	150,000
For home garrisons of the United Kingdom	50,000
For Colonial garrisons	50,000
For Army for attack abroad, naval and military expeditions	100,000
For depôts at home	65,000
	415,000
Add the full strength of the Indian Army, paid by India itself	110,000
	525,000

Of these 525,000 men, the distribution would therefore *at first* approximately be :—

	Men.
Imperial troops at home, and in reserve for any duty at home or abroad	265,000
Garrisons of India, the Colonies, and for attack or defence abroad on declaration of war	260,000
Total	525,000

The number of 65,000 men allowed for the depôts would, however, be in the same category as the immature youths now found in our existing regiments; and it would be more correct to state the actual available force as 350,000 Regular Troops fit for duty at home or abroad on a declaration of war in addition to 110,000 available for service in India. We now have only, including the Reserves, some 150,000 for home and the Colonies, and about 72,000 for India.

It is proposed, in order to obtain the above strength, that the Training Army at home should be approximately of the same strength as our present home garrisons. These are about 104,000 men; the Training Army is proposed to be about 100,000 men.

It would consist of :—

	Men.
109 battalions Infantry and Rifles, at 500 each	54,500
9 battalions Guards	7,800
21 regiments Cavalry (Guards and Line)	10,700
48 batteries Mounted Artillery { 10 Horse / 38 Field }	8,500
22 companies Garrison Artillery	7,800
41 companies Engineers	4,700
Departmental Corps	6,000
Total, including Officers and N.C.O.'s	100,000

The terms of enlistment proposed are two years with the colours and seven years with the Reserve.

Until lately the shortness of the period proposed with the colours would have been more seriously questioned than it is likely to be now that the Germans seem likely to adopt it. Twenty years ago the proposal would have met with strenuous resistance from the older school of officers who believed in nothing except the "old soldier." That belief is now far less common; Lord Wolseley and the exercise of common sense have both contributed to explode it; it is to be wished that all Lord Wolseley's opinions were as sound. It is not possible now-a-days to keep men long enough on full pay for them to acquire what are called "habits of discipline;" we might as well expect to supply them with occasional active campaigns for their instruction. If short service and a large Reserve are to be provided at a moderate cost, the "old soldier" must of necessity be given up. If we keep him, his numbers must necessarily be few, while the real defence of the Empire will have to be entrusted to half-trained and half-disciplined Volunteers. The course of providing a large Reserve of trained and disciplined men who shall be available for the defence of the Empire as a whole, instead of for home defence only, is surely far preferable to retaining only a few long-service men comparatively unsupported.

At the same time it is absolutely necessary that the strictest discipline should be maintained in the short-service "Training Army." It appears to have been recently forgotten by the heads of the military organization of this country that it is far more necessary to keep up strict discipline in a short-service than in a long-service Army. It seems to be undoubted that the discipline of British troops is not what it was. Various reasons could be given. Authority is now less regarded in civil life than formerly; the influence of a great part of the public press and of much of what is said in Parliament is undoubtedly injurious; and it is to be feared that some changes have been made in the routine of barrack life in deference to a notion that recruiting would be aided by less strictness in the details of a soldier's life. It is a fatal principle to encourage recruiting by any such means. If it is to be aided at all, it should be by relaxing the terms of enlistment, and not by relaxing the discipline of the soldier who has enlisted. "The Times" for several years published and commented on certain statistics of crime in the Army. The remarks made in discriminating between different corps were entirely fallacious; while their tendency evidently was, and was meant to be, to reflect upon the action of some Commanding Officers as compared with others in maintaining the discipline of their corps. Such comments can be nothing but extremely mischievous. However that may be, it is certain that discipline should be enforced with the greatest strictness, combined of course with that consideration which the British officer nearly always shows to his men, during the short time spent by short-service men with the colours. In the case of the old soldier discipline has time to become a habit.

It will be seen from the last page that it is proposed to increase the

Scots and Coldstream Guards by a battalion each, making in all nine battalions of Guards.

Of the 109 other battalions nine are proposed to be Rifles. The 25 second battalions of the 1st to 25th Regiments would no longer be necessary in time of peace. Their numbers could then be restored to the regiments from the 1st to the 100th, inclusive, and a battalion each could be added to the 60th and Rifle Brigade to make up the 109 Infantry and Rifle battalions. Each of the latter would have 400 short-service rank and file, with 100 officers and long-service non-commissioned officers. The numbers proposed are approximately as in the following table:—

Training Army.

—	With colours. Total.	With colours. Short service.	Probable Reserve when complete.	Totals with Reserves called up.
Infantry and Rifles ..	54,500	44,000	135,000	189,500
Guards	7,800	6,600	20,000	27,800
Cavalry	10,700	9,000	27,300	38,000
Artillery, Mounted ..	8,500	7,000	21,300	29,800
Artillery, Garrison ..	7,800	6,600	20,000	27,800
Engineers	4,700	3,900	12,000	16,700
Departmental Corps	6,000	4,800	14,600	20,600
Totals.....	100,000	81,900	250,200	350,200

The necessary number of recruits would be, including an addition for the N.C.O. of long service, about perhaps from 47,000 to 50,000 a year.

The numbers of the Cavalry are perhaps unnecessarily large.

The above strength would approximately in time of war make up the following units:—

109 Regiments Infantry, each of 2 Battalions of 750 Officers and Men; and in Depôts a total of 30,000 Men.
9 Regiments Guards, each of 3 Battalions of 750 Officers and Men; and in Depôts about 7,500 Men.
42 Regiments Cavalry, each about 700 Officers and Men; and Depôts of 8,000 Men.
100 Batteries Mounted Artillery, in all 600 Guns: and Depôts of 6,000 Men.
90 Companies Garrison Artillery, each about 250 Officers and Men; and Depôts of 5,500 Men.
13,600 Engineers, Mounted and Dismounted Officers and Men; and Depôts of 3,100 Men.
16,500 Departmental Corps, Mounted and Dismounted Officers and Men; and Depôts of 4,200 Men.

Total in Depôts, about 65,000 Men.

Summarizing the above the strength would be, including the Indian and Colonial Armies:—

Peace Establishment.

—	With colours.	Reserve.	Total.
Training Army	100,000	250,000	350,000
Colonial Army	30,000	10,000	65,000
For Small Wars, but on Home Service	25,000		
Indian Army	90,000	20,000	110,000
	245,000	280,000	525.000

Giving the total number of men as stated on page 354.

Although the regimental numbers might be restored from the 1st to the 100th Regiments, the present Territorial arrangements should remain. The country should be thoroughly divided up according to population for recruiting purposes; and such anomalies as the number of regiments called Highland, but not really recruited in Scotland, should be done away with.

The arrangements as to Barracks and Brigade Depôts, and the primary change of men from Imperial to Indian Service, it would be useless to discuss in a paper of this kind.

Probable Cost.

All estimates of the cost of such a system as that proposed can only be approximate. All that can be done is to show that the additional cost would be moderate. It is necessary that this should be done, because misleading statements are often made even by officers in high authority. The following evidence appears in the Proceedings of Lord Wantage's Committee on Recruiting, &c.:—

"*Q.* 4411. *The Chairman.* Would the battalions as they now stand be fit for home defence?

"*Lord Wolseley.* They would be better than nothing; if you mean are they man for man as good as they ought to be, I should say certainly not; but they would be much better than Volunteers, upon whom the principal defence of the country will have to fall in the event of an invasion.

"*Q.* 4412. *The Chairman.* Then the Volunteer force takes a distinct position, and one which you rely upon in the defence of the country?

"*Lord Wolseley.* Yes, the Volunteer force is a most important factor in the defence of the country; in other words, if we had no Volunteer force we should have to treble the Army or else leave the country exposed to the most appalling risks."

Of all the rash and ill-considered opinions to which Lord Wolseley has given expression, I know of none more mischievous than this opinion, as contained in the answer to No. 4412. He first in answer to Question 4411 gives a sound opinion as to the relative value of

even in different Regular Troops as compared with Volunteers: and then, in reply to a distinguished Volunteer officer, says that the strength, and by inference the cost, of the Army would have to be trebled if there were no Volunteers.

It is quite unnecessary that the cost of an efficient Reserve of Regular Troops, available for Imperial defence, as well as home defence, should be more than a mere fraction in addition to the present Army Estimates. The following is an approximate Estimate:—

Number of Men proposed to be with the colours in the preceding pages—Training Army		100,000
Colonial Garrisons—European Troops		30,000
On Home Duty, available for Small Wars		25,000
Total strength proposed to be on the English Army Estimates ..		155,000
Strength at present on Army Estimates—Home .. 104,000		
In Colonies (Europeans) .. 32,000	136,000	
Additional strength, with colours, proposed for Army Estimates (England)		19,000
The average cost of a soldier is, by the Army Estimates, £82 a year:—19,000 Men at £82	£1,558,000	
Retaining Fee of Reserves of Training and Colonial Armies, 260,000 Men at £8 15s. a year ..	2,275,000	
Annual Training of 260,000 men for a week ..	520,000	
First Training of 1,000 Subalterns for a year for the Reserve at £180	180,000	
Training of 9,000 Reserve Officers for a week at £7 each	63,000	
Total additional cost		£4,596,000
Deduct—		
Cost of Militia	1,582,566	
„ Yeomanry	115,284	
„ Volunteers	1,110,110	
„ Army Reserve (present), about 69,000 Men	642,511	
		3,450,471
Additional cost of proposed system		£1,145,529

The present Army Estimates are about £17,631,200
Add 1,145,529

£18,776,729

It thus appears that, so far from an Army Reserve of a strength equal to that of the Volunteers costing treble the present cost of the Army, it could be provided for about one-sixteenth of that cost additional.

It would of course be open to the officers and men of the present Militia and Volunteers to qualify for the Reserve by the necessary training. In time of war, if the strain were great, it might be possible to have a Militia in addition to the Reserve, embodied for service at home; in which case the 150,000 men described as the "Home Defence Army" could, after the Militia had received the necessary training, be utilized for foreign service. Or the numbers of the pro-

posed Reserve could be raised by increasing the numbers and cost of the "Training Army."

The question whether the Government and people of the country are likely to sanction an expenditure even of an additional million of money with the object of doubling the offensive and defensive power of the Army has been fully dealt with in Chapter I. It is the most important part of the whole subject.

And the other most important part of the subject, next to the point last mentioned, is how far recruits are likely to come forward for a service like that proposed. The number of recruits obtained for the Regular Army in 1891 was 35,346; and the number obtained in the same year for the Militia was 39,783; or a total for both Services of about 75,000 men.

Taking 50,000 for the number of recruits required for the proposed Training Army and its Reserve, 9,000 for the Indian Army, and 6,000 for the Colonial Army, the total number required would be about 65,000 a year, or 10,000 fewer than are now obtained for the Army and Militia.

There seems to be no reason why there should be great difficulty in obtaining the number required for the Training Army, in view of the short period of service with the colours.

War Office Organization.

The organization of the central War administration at the War Office has been recently much discussed.

I do not think the subject is one of nearly so much consequence as that of providing the necessary number of fighting men for the Army. The vigorous prosecution of a war will always depend on whether we have an able and determined War Minister backed up by a strong Cabinet; and if the men and *matériel* are present, the administration will pull through.

It is possible that a War Minister specially appointed at the beginning of a war to control both the War Secretary and the First Lord of the Admiralty for combined operations might be advantageous. But so long as such a Minister could find no available men in the Army for active service, he would be quite helpless. He would in any case only cause friction if appointed in peace time. So far as the Army is concerned, at present the saying of the Duke of Wellington as to the soldiers' boots is entirely applicable: the first thing wanted is more men, and the second and third things wanted are still more men.

The worst feature in the War Office administration itself is the liability of an officer in a high position, who has fads as to the Service, getting the ear of the Secretary of State and monopolizing power. The only way in which this can be prevented is by having all important business submitted to a Council or Board like that of the Lords of the Admiralty; the War Secretary to be President, and the members to be—

1. The Commander-in-Chief—in charge of all the *personnel* of the Army;
2. The "Master-General" or "Surveyor-General" of the Ordnance —in charge of all the *matériel* of the Army; and
3. The Financial Secretary or Accountant-General—in charge of all the Finance and Estimates for the Army.

The consultations of such a body would obviate the complaint that a single officer has sometimes been alone consulted by a War Secretary, with indifferent results to the welfare of the Service.

Friday, March 3, 1893.

LIEUTENANT-GENERAL W. H. GOODENOUGH, C.B., R.A., Member of Council, in the Chair.

A SCHEME FOR ESTABLISHING A ROYAL ARMY SOCIETY FOR EACH COUNTY AND GREAT CITY, IN ORDER TO IMPROVE THE STATUS OF THE BRITISH SOLDIER ON HIS RETURN TO CIVIL LIFE.

By Commander WALLACE B. MCHARDY, R.N., Chief Constable of Lanarkshire.

THE subject which I have to bring under your consideration is—

"A scheme for establishing a Royal Army Society for each county and great city,[1] in order to improve the status of the British soldier on his return to civil life."

By way of preface, and to make good, as it were, my own *locus standi* on the present occasion, I should state that I was asked by Lord Ruthven, who is the Chairman of the Committee, in Lanarkshire, which is actively promoting this Society, if I would, as one of that committee, and as a member of the Royal United Service Institution, obtain permission from the Council to read a paper in this theatre, explanatory of the Society, its aims, constitution, and mode of working, as our committee very rightly thought that this was the most fitting place in which to introduce the Society to the notice of Her Majesty's army, and to have the whole question fully discussed in all its bearings, in order to obtain that healthy criticism, "light and leading," which are so essential to guide our steps aright in the immediate future.

Whenever the simple pronoun "I" is introduced it signifies my own personal views or opinions, which may or may not be held by others of the committee.

When launching a new society, however laudable and patriotic its aims may be, it is very necessary to consider whether the new agency is absolutely required, and whether it will prove helpful, hurtful, or harmless to existing societies already working in the same field for other or for more or less similar objects.

We intend to show that such a Society as the one we are promoting is required, and at the close of this paper, when the scheme has

[1] By "great city" is meant a city having a population of 200,000 inhabitants.

been read, and its working explained, we shall draw attention to the fact that the Royal Army Society cannot possibly prove otherwise than helpful to every society, agency, or individual engaged in any work tending to benefit the British soldier.

To avoid any possible misconception, it may be well to at once emphasize the fact that the Royal Army Society will not be, in any sense whatever, a "charitable society," but, if I may borrow a Parliamentary term, it may be described as "An enabling society to promote self-help," for it is designed merely to create and maintain the necessary machinery to enable every good and faithful soldier, by his own merit, with the co-operation of his comrades and self-help, to fight the battle of life successfully, in a fair field, without outside favour or charity.

By order of H.R.H. the Commander-in-Chief, attention was recently directed to the duty of facilitating the employment of our Reserve and time-expired soldiers on their return to civil life, and for this object (similarly to many other counties) Lanarkshire very readily responded to the call, and formed an association on the lines suggested by the military authorities. The executive committee were anxious to facilitate the employment of soldiers by fair competition in the labour market, rather than by asking it as a favour from employers. We recognised that this was the only course that held out any prospect of a permanent and reliable solution of the difficulty, and, moreover, that it was due to H.M. army that the independent status of its members should not be in the smallest degree compromised, either with employers or fellow-workmen, by any action that was taken by the committee.

I am fully satisfied that in most instances the heads of large firms and the principal employers of labour are too much occupied with other business to allow of their exercising any *continuous* and effective influence in favour of men from the army, and I believe that any scheme which mainly depends on the *constant active* co-operation of the larger employers will prove a failure, for it will be found that the engagement and entry of the men in many large works and other establishments rests mainly in the hands of sub-managers, foremen, oversmen, *contractors*, or others; and, in point of fact, in order to secure effective assistance, it is necessary to get into close connection with many comparatively less known subordinate officials, and to rely in great measure on those soldiers who attain to these positions of influence, and who may be able and willing to help their comrades.

One of the first things that we endeavoured to ascertain was, where are the bulk of our reserve or discharged soldiers, and where have they met with most success? Now, this is one of the many things that it almost passes the wit of man to discover.

For all army representative purposes, the hundreds! aye, the thousands! or ten thousands! of successful and well-to-do soldiers in civil life are lost to view. Their meritorious lives reflect no apparent credit on the honourable profession in which they have been schooled, and to which profession they probably owe, in great measure, their success. But, unfortunately, the insignificant minority of unemployed

soldiers are always in evidence, for, like the supernumeraries in a stage play, the less fortunate and the undeserving apparently multiply their numbers indefinitely by continuous reappearance.

The Corps of Commissionaires has, in the few cities where they are established, done much to maintain the credit of the British soldier; but, as they retain a *quasi*-military organization, they are not generally taken as fully representative of the value of the soldier when in ordinary civil employ.

But the Corps of Commissionaires affords, at least, some evidence that, if the soldier discharges faithfully and well even the most ordinary duties in civil life, he may (provided he is known to have served well as a soldier) always count with certainty on being respected and held in favour quite beyond what is usually accorded to men in the same civil vocation or situation.

The Royal Army Society hopes to indicate and identify every good soldier for his whole life, so that he may be held in the same favour as the Commissionaires and others that are now known.

We were led to reflect on the circumstances in which many a promising and deserving young soldier must find himself when discharged from his profession to start life anew at 24 or 25 years of age.

His habits of living and his aims in life having been greatly modified by the years spent in the army, it is as likely as not that he may have few ideas in common even with his own kindred. If gifted with ordinary common sense and the desire to get on in the world, this young soldier will have made up his mind (possibly before leaving India) that on his discharge, after spending a short holiday with his old parents, he will endeavour to get employed at some particular branch of industry for which he has a fancy, and which offers some prospect of a fair return for his labour.

With a few pounds of ready cash, he may think it a wise course to visit some of the larger centres of this particular industry, in order to choose the locality and firm that apparently offer the best opening, and he sets out on this errand; but when he enters these towns, being an utter stranger and knowing no one, he will be comparatively lost, and unable to push his enquiries profitably. There may be quite close at hand comrades from his own regiment who are settled down in good employment, but he has no means available for discovering the fact. He will very possibly pass soldiers in the streets who are well qualified and would be most willing to give him every information if he asked it, but there is nothing to assist mutual identification. How different would be his circumstances if he could recognise in every locality each one who had a record of good army service—if he could be sure that in every part of the United Kingdom, merely from the fact that he had been a good soldier, he would be almost certain of readily meeting with friendly advice and information from his army brethren. How much expense, how many needless disappointments, and perhaps thoughtless, but no less painful and dispiriting, rebuffs might he not be spared, if he could only get hold of any well-to-do soldier, who, being resident in the place, knew something of the

locality and people. Can any one doubt that the case that is here so very imperfectly pictured to you is typical of the experiences of hundreds of deserving young soldiers every year? Mark you, we are not now considering the case of the ne'er-do-weel, or less deserving soldier—for, candidly speaking, we take no very special interest in him—but the case before you is one of those manly, self-reliant young fellows who form the great bulk of H.M. army.

It may perhaps suffice to state here that, on considering fully these and many other disadvantages which the young and deserving soldier must now have to contend with in civil life, we were convinced that nearly all the more serious difficulties would be either wholly removed or easily overcome if adequate means were devised for the ready recognition and identification of every good and deserving soldier after he is absorbed into civil life.

There seems to be no more effective and appropriate mode of securing recognition than an approved ribbon or emblem granted under Royal authority and protected by statute.

This ribbon or emblem is the keystone of the entire scheme for establishing a Royal Army Society. At first it must occur to many (as it did to ourselves) that if a ribbon or other emblem was expedient and requisite for this purpose, it would be granted by Her Majesty after consulting her military advisers, and dealt with exactly as in the case of other military ribbons and decorations.

But with regard to this ribbon or emblem, there are two special features that must be very carefully considered:—

First.—To be useful and effective for the purpose it is intended for, it must be thoroughly popular and very generally worn by all to whom it is granted; consequently there must be no ground for a shadow of suspicion on the part of soldiers that it is a trick or clever dodge of the War Office, in order that they may ear-mark the time-expired soldier for any ulterior object.

Second.—This ribbon or emblem should be equivalent to a certificate or strong recommendation of character, and therefore it will require to be very strictly and honourably safeguarded by some highly-placed and trusted authority who can be safely charged by Her Majesty with this delicate and responsible duty.

Feature No. 1 suggested the conception of a Royal Army Society which shall establish a kind of military freemasonry amongst soldiers in civil life, and which would be wholly dissociated from all connection with the military departments, and so organized that only members voluntarily enrolling themselves after their discharge to civil life will acquire the privilege of using *the sign*, that is, wearing the ribbon or emblem. In order that the work of the Royal Army Society, when thus voluntarily established, shall be confined to wise and proper channels, and to guarantee to Her Majesty's Government adequate powers for supervision and control, it has been deemed necessary to suggest that the government of the Society may be exercised under the authority of and subject to the supervision of Her Majesty's Privy Council.

Feature No. 2 naturally points to the Lord Lieutenant and the

County Lieutenancy, on account of their long and honourable connection with the local military forces, being the proper authority to appoint as the Governor and Deputy-Governors in each county; also, in the absence of any identical body existing in great cities, the Mayor or Provost and the ex-Mayors or ex-Provosts are named as the Governors and Deputy-Governors. By having the foregoing as the governing body of the Royal Army Society in each county and great city we believe that we should secure an exalted and well-informed *permanent* administration, armed with great local knowledge and influence, and one that would command the confidence of both the army and the people.

It appears necessary to state very distinctly that no one connected with the Royal Army Society will be allowed the privilege of wearing the ribbon or emblem unless he is qualified by good and faithful army service. The Governors, Deputy-Governors, and others connected with the Society will not wear the ribbon unless they possess the required qualification by army service.

We consider that it will be very important for the success of the work of this Society that all officers shall become members, and make a general practice of wearing the ribbon when not in military uniform.

As the wearing of a military ribbon *at all times when in plain clothes* may, at first, strike many as being a novel suggestion, there is, we fear, a very serious risk that the mention of it will rather excite ridicule and be treated by many officers with disfavour. Well, we fully recognise, and in some measure we sympathize, with this view, but, after the laughing is over, and when jests have run their course, we ask for calm reflection, and we have every hope and assurance that second thoughts will nullify the first hastily-conceived impression.

Every army officer is proud of his glorious profession, and wearing the ribbon will simply be an acknowledgment of this fact. If every officer wears an identical ribbon there can be no appearance of swagger or bounce, as all officers will be alike in this respect. Officers now frequently make a practice of wearing fancy regimental ribbons on straw hats, and they also use regimental neckties, and, this being the case, what reasonable objection can there be to wearing a small piece of ribbon granted by Her Majesty in order to assist in promoting the welfare of her deserving short service soldiers on their return to civil life?

We believe that the Royal Army Society ribbon may, by illustrious example, become universally popular amongst all army men, and we hope that in Lanarkshire, at many big shooting parties next autumn, the ribbon will be very much in evidence amongst sportsmen, gamekeepers, and beaters; and that the first thing to attract the eye and awaken the interest of strangers on their arrival in the county will be the number of railway servants, guards, ticket collectors, and porters, the number of shopmen, cabmen, policemen, club, hotel, and private servants, the number of iron-workers and miners, and people of all classes, that will be wearing the ribbon that Her Majesty may

be graciously pleased to grant to the members of the premier Royal Army Society.

To complete the working machinery of the Royal Army Society, it may be necessary in each county or great city to establish at one or more of the industrial centres of population small agencies or enquiry offices for the use of soldiers engaged in or seeking civil employment.

These may be established generally on a small scale, by renting premises with accommodation for a caretaker and a small reading-room and smoking-room; but in a few cases sleeping accommodation may also be provided, where the men could find clean temporary accommodation at night at a moderate cost; or arrangements could very possibly be made with some of the resident members of the Society to provide any temporary accommodation required—the object being simply to secure economy and comfort for the men seeking employment.

Carefully compiled directories, giving the names, regiments, addresses, and places of employment of all Royal Army Society members in the locality and the neighbouring villages, and containing full information as to the trades and industries, would be kept for reference at each "rendezvous."

The name "rendezvous" has been selected as the most distinctive and characteristic designation for these agencies, and the word has been for so many years thoroughly anglicized, and it is so familiarly known to the Services, that we do not hesitate to recommend it for adoption by the Royal Army Society.

We must remember and always keep in view that the Royal Army Society is concerned with the work of incorporating and rehabilitating the short service soldier into civil life, and facilitating his absorption into the ranks of the civilian population, where we are confident that deserving soldiers will be welcomed and esteemed.

The soldier in civil employ will be all the better if he keeps wholly separate from the soldier in military service, and, for this reason, we think it will be very necessary to guard against the offices or agencies of the Royal Army Society being associated with those of any institute, lodge, club, guild, or any one of the many existing associations belonging either to civilians or to the army.

By all means let these prosper and spread for their own good objects, but we wish the Royal Army Society to carry out its great and lofty undertaking quite independently of all existing military associations, societies, institutes, guilds, &c.

We intend that the Royal Army Society rendezvous shall be used as a friendly meeting place for all connected with the Society, to promote their intercourse, in order that they may consult, advise, encourage, or assist one another.

By assistance, we do not mean pecuniary or charitable aid, but we refer to those kindly acts of friendship and exercise of influence which every one so highly values. We wish it to be recognised that the most valuable service that can be rendered to the married soldier is to assist his children to get a good start in life, and, by taking a

friendly interest in their welfare, encourage his boys to do him credit. We believe that resident military gentlemen of influence will find great pleasure in visiting these rendezvous frequently (and at stated times occasionally), and they will urge the younger men that, inasmuch as they have been good soldiers, they should, both for their own credit and the credit of the army, continue to prove good citizens; and that on these visits they will, whenever they find occasion, give sound advice, and promise to use their personal influence, if necessary, to assist any old soldier in getting good employment or advancement for himself or his boys.

But it is not only on the good will of military officers that we depend for securing the welfare of our soldiers in civil life; we intend that the Royal Army Society shall afford opportunity to the whole nation to evince their kindly feeling for and on behalf of every *deserving* soldier, and the Society will do this by simply making him known and identifying him with the Royal Army.

We have great faith in the popularity of the good and deserving soldier, and we believe that, with regard to this, all classes among this great military people are thoroughly of one mind.

I believe that our military authorities do not sufficiently recognise the fact that the history of this people for at least the last three centuries proves that we are the greatest military race that the world has ever known.

Lest any of my own Service should take exception to this statement, I may explain that I use the word "military" in its widest sense, and it embraces "all that pertaineth to arms," whether afloat or ashore.

No one knew better than the great genius Bonaparte how wholly inapplicable was his scornful allusion to us as a "nation of shopkeepers." Yet, it would seem that the careless have been ready to accept this as one of the very rare instances of his speaking the whole truth. Had Bonaparte spoken according to his conviction, he might with more truth have said, "A nation of workers, who have all the instincts of soldiers."

Our military instinct and capacity shows itself amongst all classes in their great powers of—

Initiative,
Conquest,
Organization, and
Government;

but, above all, in the Briton's self-command, or true discipline, which he manifests in "love and respect for law and order."

For ample evidence we have only to note—

The work effected and great results achieved by the East India Company.

The colonizing and conquest of what have now become the United States of America (and we know how those of our race and kindred bore themselves in both armies during the rebellion of the Southern States).

The work at this moment making assured progress in Africa.
The Volunteer movement of 1857, and its present capacity for development.
These being all, in the strictest sense, military undertakings which have been initiated and carried through without active Government assistance.

It does not necessarily follow that, because we have not a military form of Government, we are not, and cannot be, a military people.

On the contrary, this is one of the many causes that have given to the British race those habits of self-discipline and self-reliance which have formed our nation into a great military people having a world-wide Empire.

It may now be convenient for you to hear read the concise statement, giving a draft sketch of the aims, constitution, and method of working proposed for the Royal Army Society, as submitted and adopted in Lanarkshire.

"ROYAL ARMY SOCIETY, LANARKSHIRE."

President—The EARL OF HOME, Lord Lieutenant of Lanarkshire.

Vice-Presidents—The DUKE OF HAMILTON AND BRANDON, K.T.
Sir WINDHAM C. ANSTRUTHER, Bart., Vice-Lieutenant of Lanarkshire.

Executive Committee for "Promoting the Society"—

LORD RUTHVEN, Chairman.

JOHN CUNNINGHAME, Esq., of Blairston.
W. ALSTON DYKES, Esq., County Clerk, Lanarkshire.
The Rev. H. M. HAMILTON, D.D., Minister, Hamilton.
Lord HAMILTON OF DALZELL, Convener of Lanarkshire.
Sir WILLIAM HOZIER of Mauldslie, Bart., Ex-Convener of Lanarkshire.
J. C. HOZIER, Esq., M.P. for South Lanarkshire.
Sir SIMON M. LOCKHART, Bart.
Colonel A. H. C. LYNCH, Commanding 26th and 71st Regtl. Districts.
Commander WALLACE MCHARDY, R.N., Chief Constable of Lanarkshire.

BARNCLUITH, HAMILTON, N.B.,
13*th January*, 1893.

1. The Committee of the Reserve and Discharged Soldiers' Association (Lanarkshire), having endeavoured to ascertain the readiest means to ensure that men from the ranks of Her Majesty's army shall obtain suitable employment on their return to civil life, have arrived at the conclusion that the attainment of this very desirable end will be greatly facilitated, and, moreover, that it can only be fully assured, by the formation throughout the United Kingdom of a Royal Army Society for each county and for every great city.

2. The primary aim of every such Society would be, within its local area, to identify and distinguish from all other residents, and at all times, any one who has had the honour of serving for three or more years with a good character in the regular forces of Her Majesty's

army: to promote not only a strong bond of friendship or military brotherhood amongst all its members, both officers and men, but also to foster throughout the public generally a spirit of good will and esteem for all who have thus served with good character in Her Majesty's army.

3. The secondary aim of the Society would be to lead the labouring and industrial classes and all seeking an opening for their sons to form a higher and more accurate estimate of the advantages of the army service, and to bring specially home to their minds not only the immediate benefits offered by a military career to any healthy able-bodied youth, but a conviction of the future good that may be secured to all young men who serve a few years in the ranks of Her Majesty's army, by making it evident to every one how much all deserving army men are respected, how favourably they and their families are circumstanced, and how greatly they and their children are befriended.

4. It may suffice at this time merely to sketch a brief outline of the constitution, scope, and working of such a Society.

5. Under the gracious favour of the Sovereign, the Royal Army Society might be constituted as follows:—

PRESIDENT OR PATRON.	Her Majesty.	
VICE-PRESIDENTS OR VICE-PATRONS.	The Royal Princes and the Field-Marshals.	To be appointed at Her Majesty's pleasure.

LOCAL GOVERNING BODY.

	IN COUNTIES.	IN GREAT CITIES.
GOVERNOR.	The Lord Lieutenant of the County.	The Mayor or the Provost of a City.
VICE-GOVERNORS.	The Vice-Lieutenant of the County and all resident Peers.	
DEPUTY GOVERNORS.	The Deputy-Lieutenants of the County.	The ex-Mayors or ex-Provosts of a City.
EXECUTIVE COUNCIL.	The Lord Lieutenant. —? Deputy-Lieutenants. —? Members.	The Mayor or Provost. —? ex-Mayors, &c. —? Members.

MEMBERS WHO WILL ALL WEAR THE ROYAL ARMY SOCIETY RIBBON.

MEMBERS—EX OFFICIO. (Officers and men of all grades.)	Every one *serving* in the Regular Forces and resident within the limits of the county or city, or who belongs to the territorial organization of the county or city.
MEMBERS. (Officers and men of all grades.)	Every one who can show that *he has served* three or more years in Her Majesty's Regular Forces, including the Royal Marine Artillery and Royal Marines; and that he belongs to the Army Reserves, or has retired or left either Service with a good character; and that he is a resident in the county or city, shall, on payment of an entry subscription of 1*s.*, be enrolled as a member of the Royal Army Society (county or city).

CIVILIANS AND OTHERS WHO GIVE FINANCIAL ASSISTANCE.

FELLOWS AND ASSOCIATES OF THE SOCIETY.

It is contemplated that many of the public who may be unable to give their time or personal service to Her Majesty's army, volunteers, or any of her defensive forces, might be disposed to seize the opportunity to render financial assistance to the Royal Army Society. In such cases it might be well to recognise donors of a certain "minimum sum" as Fellows of the Society, whilst annual subscribers of a certain sum might be enrolled as Associates.

6. The Royal Army Society would request all its members when not in military uniform to wear, as a distinctive emblem, under all circumstances, at all times, and in all places, one uniform Royal Army Society ribbon (*or badge* ?) of such design as Her Majesty may be graciously pleased to approve, and this ribbon would be identical in all counties and cities throughout the kingdom.

7. It may be necessary to obtain from Parliament a Statute to protect the use of this ribbon, enforcing the restrictions on its use by imposing penalties on any one who, not being a duly enrolled member of the Royal Army Society, attempts to wear it or to make use of any counterfeit copy of it.

8. The members of the Society may, however, be expected to prove the most jealous and effective guardians of the ribbon of their Society.

NOTE.—It has been suggested that a ribbon of red and gold might be deemed very suitable, but we do not presume to offer any opinion on such a subject.

9. The Royal Army Society for each county or great city might be formed under one general charter, but each would work as a separate corporation, independently administered by its own Governor, Deputy-Governors, and Executive Council. The establishment of such societies would perfect the idea involved in the territorial arrangements and localization of the army.

10. All rules and bye-laws enacted by the Royal Army Society of any county, or of any great city, for the regulation and management of the Society, to be submitted for approval to Her Majesty's Privy Council, and to be signed by the Lord President of the Privy Council.

11. It is believed that under such a constitution as is here sketched would be found a sure guarantee that the operations of the Royal Army Society can in no way prejudice the discipline of Her Majesty's forces; whilst the care taken to keep it entirely free from all connection with the official military departments would afford the necessary safeguard against any suspicion being entertained amongst those whom it is intended to benefit, that by joining the Society its members would incur any fresh military obligations, or in any way find themselves under military supervision.

12. The foregoing outline thus drafted for the constitution of the Royal Army Society indicates the scope of the Society.

13. It would be essentially a voluntary Society, having for its sole aim the promotion of a general spirit of friendship, military brotherhood, and self-help, throughout all those who serve in Her Majesty's army (regular forces), without distinction of rank or class.

14. All would wear the same emblem, and each one would be animated with the same spirit of love for his Queen, and loyalty to his fellows.

15. Rich and poor, officer and private, high and lowly, could all co-operate in the noble and beneficent work of such a Society, and all would participate in its incalculable benefits.

16. In this great military Empire the emblem that is indicative of good army service must not only appeal to the warm feelings of every military man, but it must attract the eye, and awaken sympathy or emulation in the breast of every man, woman, and child in these lands.

17. The work of the Royal Army Society should, at a time not far distant, embrace every channel that tends to the advancement or betterment of the *social and temporal* well-being of our soldiers in civil life, and that of their families and dependents; and whilst in trustful dependence on Divine guidance, devoting itself to the accomplishments of these great ends, it would, under all circumstances, avoid questions of religious creeds and party politics.

18. It is not possible, and it could serve no useful purpose, to deal at any length with the variety of useful work that this Royal Army Society would gradually overtake and develop, but, in a few lines, reference may be made to its immediate capabilities.

19. Its roll of members, together with its emblem, would at once make known to one another army men living in close neighbourhood, but who at present may be quite ignorant of their special claims to mutual good fellowship.

20. The Royal Army Society ribbon would designate and identify every faithful and good soldier, and it would do this even more effectually than the privilege of retaining their military rank now secures the partial identification of *officers* who have served in Her Majesty's army.

21. The emblem would enable the *esprit de corps* and good feeling of every soldier to exercise its influence in all places and at all times, in the office, factory, iron-work, mine, workshop, market, field, and highway. The general public would form their estimate of the rightful status of the British soldier in civil life from the vast number of respected and well-to-do members of the Royal Army Society, and would not misjudge the whole Service because of the few less fortunate examples that are to be found in it as in all professions and vocations of life.

22. The Royal Army Society would actively encourage and promote habits of thrift and provident forethought amongst its members, and for this purpose it would, as far as possible, make readily available to its members the many existing well-established friendly and provident or other societies. The principle on which the Society would work in this direction would be *not to create new*

machinery, but to make the utmost use, on the most favourable basis for its members, of all the agencies at present existing for the benefit and aid of the industrial or military classes, thus economizing its own funds while knitting the soldiers more closely to all classes, and securing at the minimum rate due provision in cases of sickness, death, or loss of employment.

23. Convenient, but not necessarily large, premises could be rented in all central townships, to be called the Royal Army Society Rendezvous. Such premises might, in most cases, comprise merely a small reading and smoking-room, with a dwelling-house of two rooms and kitchen attached. The dwelling-house might be occupied rent free by a selected member of the Society, whose wife would take care of the premises.

24. No intoxicating liquors would be allowed in the rendezvous, which would be simply a friendly meeting place for the members of the Society.

25. In the larger industrial towns good sleeping accommodation (three, six, or more beds) might be also provided at the rendezvous, where members of the Society coming to the town in search of employment could procure temporary accommodation, for not longer than one week, at a minimum charge.

26. At each rendezvous there would be kept for ready reference a complete directory of the members of the Royal Army Society that are employed or resident in the district, and all other information likely to be of assistance to soldiers on their return to civil life. The resident member of the Society, acting as caretaker, would be selected with a special view to his being referred to for information on such matters.

27. It is believed that the Royal Army Society's *local* rendezvous, with well-informed caretakers and directories to refer to, combined with the general wearing of the R.A.S. Ribbon, will prove to be the most effective machinery that can be created to aid soldiers in their pursuit of civil employment, and, instead of languishing, it is of a kind that must naturally increase in usefulness every year.

28. It may be expected that the resident military gentlemen would gladly interest themselves in these rendezvous, and would visit them frequently in order to meet with the men of their Service, and that they would thus be enabled to learn how best to promote the interests of these members, or the welfare of their families, and the advancement of their sons.

29. The effect of the fellowship and good feeling thus encouraged, and of the strong bond of union thus cemented amongst all its members, without distinction of social rank, could not confine itself to the Royal Army Society, but it must ultimately propagate and diffuse itself throughout the masses of the people, and tend to dispel many of the prejudices and misunderstandings that now exist between different grades of society. This is probably not the least important good that may result from the formation of a Royal Army Society.

30. Before closing this reference to the proper work of the Society, attention may be called to the advantageous use that might be made

of this influential organization on war breaking out and our army having to take the field, provided it was deemed necessary and expedient to utilize the Society for any such exceptional purpose, under special and critical circumstances.

31. At such a crisis the Royal Army Society in every county and great city would be able to give our troops a practical assurance that their wives and children should be befriended till their safe return, and that if any, unhappily, became widows or orphans, the Royal Army Society would make it a sacred duty to spare no efforts to ensure generous provision being made for them, and if the funds of the existing charitable societies for aiding soldiers and their families were unable to satisfactorily carry out this work, the Royal Army Society, under such exceptional circumstances, would only have to appeal to their county or city, and there can be little doubt that ample funds would be forthcoming to enable these societies to fulfil so sacred an obligation.

32. The organization, being limited to the area of a county or great city, would enable all the work of the Society to be carried out at all times with great economy and thoroughness.

33. In war time H.M. Government might receive valuable assistance from these influential and favourably placed Royal Army Societies in maintaining the war strength of their territorial regiments.

34. It is recommended that, to ensure all funds being applied directly to the benefit of the soldier, it should be a fixed and fundamental principle in the working of the Society that there should be no paid officials of any kind, except members of and below the grade of non-commissioned officers, who might be required for mere clerical labour and to act as caretakers. All other offices in the Royal Army Society should be purely "honorary," without fee or pecuniary benefit of any description—labour on behalf of such a society bringing its own reward and honour.

35. It must not be forgotten that this scheme for instituting a Royal Army Society is a very far-reaching and comprehensive measure, but it is felt that nothing of smaller compass can prove effective; and, moreover, it is also believed that the maintenance of H.M. army at its adequate strength by means of *voluntary enlistment, coupled with short service*, will, in the future, greatly depend on the successful working of such a Society as is now very strongly advocated.

36. The county of Lanark possesses many advantages that may tell favourably in promoting such a scheme as has been here sketched. It is a wealthy and compact industrial county, containing one-fourth of the population of all Scotland, and the high efficiency of its numerous Volunteer forces bears ample testimony to the military instincts existing throughout all classes of the industrial community.

37. The question has been asked—Will Lanarkshire grasp the opportunity, and be the county to at once promote the formation of the premier Royal Army Society, and thus do all that lies in her power to ensure the successful development of the movement throughout the United Kingdom?

38. This question has been answered in the affirmative—a print of this document having been submitted to every Deputy-Lieutenant of Lanarkshire and to members of the county military families, has, with only three exceptions (two of whom are non-resident), been returned signed and cordially approved. The heads of the several religious bodies in the county, and the Lord Provost of Glasgow, have also signed and approved of the scheme.

RUTHVEN,
Chairman of Executive Committee for promoting the Royal Army Society.

Deputy-Lieutenants abroad who could not be communicated with—
EARL OF HOPETOUN.
LORD BLYTHSWOOD.
SIR JOHN MUIR, BART.

If the work of the Royal Army Society is conducted strictly on the lines here laid down, it is, we think, quite impossible to conceive that it will in the least degree hinder the accomplishment of any work that has been taken in hand for the benefit of the British soldier.

Neither can it prove detrimental to, or clash with, any existing military society or association.

Good feeling for the soldier is, as we all know, keenly on the alert for some channel for active work, and a very useful handbook by Colonel James Gildea, entitled "The Naval and Military Funds and Institutions," shows the number and indicates the character and scope of the various organizations, thus affording another piece of evidence, if it was required, to illustrate the general regard and good will felt for soldiers.

If we consider the case of three typical societies, we think we can sufficiently indicate what effect or bearing the Royal Army Society will have in respect of the work and the general organization of every Society.

For this purpose, we first take the Soldiers' and Sailors' Families' Association, whose objects are distinctly charitable and benevolent.

This excellent Association would, with regard to the Royal Army Society, occupy exactly the same relation as any of the hospitals, orphanages, or like institutions, and the Royal Army Society would simply bring to its notice, and solicit its attention and care for, any local cases within the county or city that seemed deserving and in special need of the services or benefits conferred by such families' association, hospital, orphanage, or kindred institution.

In this way, the Royal Army Society within each local area (whether county or city) would prove very helpful in promoting the effective and economical working of the Soldiers' and Sailors' Families' Association.

Also, as has been stated (*vide* paras. 30, 31, 32, 33, scheme), the

Royal Army Society could, in war time, but only if necessary and desired, give valuable aid to this and kindred associations in raising special funds to meet the increased strain that the income of all such agencies must then experience.

There may be many other matters in which any such association, hospital, or orphanage might consider it an advantageous course to secure the assistance of such a locally well-informed and influential Society as this Royal Army Society will be, but the work of any such institution will be wholly and absolutely distinct, and will have nothing in common with our Society, except good will.

The next class are the "employment" societies, and for our present purpose we may take the "National Association for employment of Reserve Soldiers" as the best type to represent all such agencies.

The Royal Army Society does not and cannot interfere with these employment agencies, who are doing their good and very useful work *in their own way*, and, in fact, their existence will, we know, prove most helpful to much of the work which we desire to accomplish by other methods than they use, and we also have every reason to believe that our special work will tend greatly to their advantage.

If the success of our joint labours should eventually lead to the disappearance of the unemployed soldier, these societies would perhaps find themselves temporarily in the ranks of the unemployed, but their experience would ensure that they would soon discover some great and useful field for their skill and working capacity, and in any case they would have the satisfaction of having accomplished their great work.

However, so long as the demand for soldiers in civil life does not exceed the supply, we hope to greatly assist the work which these employment societies have at heart, and there appears to be no possibility of our work proving otherwise than mutually helpful.

Lastly, we will ask you to carefully take into consideration the "Army Veterans' Association," which we are proud to recognise as the Society possessing, in great measure, many of the more promising features sketched out in the scheme for a Royal Army Society, and partially embracing the same field of work for the attainment of, to some extent, identical objects.

The Veterans' is unquestionably a very valuable association, and though only started at Chatham towards the end of 1891 under the name of the "Veterans' Association, Chatham Circle," it has, in that one area, in little more than one year, attained marked success.

The prime mover in establishing the "Veterans," and the one to whom its conception was due, was then the General Commanding the Thames District, viz., General Goodenough, who has so kindly consented to occupy the chair at this meeting.

Subject to correction from the gallant Chairman, we will mention the principal points of difference that can be observed between the Veterans' Association and the proposed Royal Army Society.

The "Veterans' Association" deals only with time-expired soldiers, and does not include the reserve soldier, whilst the Royal Army Society will include both.

The "Veterans" apparently is designed to work in "circles," corresponding to military administrative areas, and its management is more or less directly under official military authority, whilst the Royal Army Society works in well-established and familiar local areas, corresponding to civil administration, and its management is independent of the military departments, unless they exercise it through the Privy Council.

The "Veterans," whilst indirectly doing much to promote the civil employment of its time-expired soldiers, does not directly and actively promote this object. The Royal Army Society is designed to very specially work for this object—including the employment of the reserve soldier.

Again, it seems to us that the idea of the Veterans' Association (I hope that our Chairman will correct me if I am wrong) is to strengthen the link that binds the soldier in civil employ with his comrades serving in the army, and the main efforts of the Royal Army Society will be to assimilate and absorb the young reserve and time-expired soldier as quickly and favourably as possible into the ranks of the industrial classes, and forge a swivel to attach him to civil life, so that, turn where he will, his prospects shall be bright and hopeful.

The ribbon which the Royal Army Society hopes may be granted to its members will have the prestige that always attaches to an honour bestowed by the gracious favour of the Sovereign.

These, and other considerations to which I need not specially allude, will, we are confident, be fully considered with an open mind by yourself (General Goodenough) and all others interested, and we trust that we may rest satisfied that, to a large extent, these two societies can be mutually helpful to one another, and, being both actuated by the same unselfish and patriotic spirit, there can never arise any jealous rivalry or competition.

In bringing this paper to a close, we would remind every one of the fact that the future welfare of the deserving and faithful soldier is the matter under consideration, and in this assembly it would be superfluous to say more.

The CHAIRMAN: I have now to invite discussion. I think I may say, and I am very pleased to think it, that this admirable idea of dealing with a most important subject has been well brought before us to-night, and has received a hearty welcome at your hands. We are placed in this position. We are sitting as it were in Parliament, and this is the first reading of the Bill. I imagine that the lecturer has come here in order to invite discussion, and to elicit hints as to the management and development of such a Society as he proposes from those who are present; but we are placed in this position that we have to proceed to discuss the Bill in Committee, and to pass any part of it in third reading, all in one sitting. There are two points which, as I shall not have another opportunity, I will ask the lecturer to explain, when it comes to his turn to reply, and that is the bearing of Paragraphs Nos. 73 and 74, with reference to keeping the Royal Army Society entirely distinct from any other Society. We shall also be glad to hear some further explanations upon the Paragraph 30, which seems in a particular way to show the need of intervention, or the exercise of responsibility, on the part of the Military Authorities of this country, whereas the lecturer told us that this Society is to be governed entirely under the Privy Council, and the Military Authority is

only very indirectly referred to. I will now ask gentlemen to give us their views upon this most important subject.

Lieutenant-Colonel BAYLIS, Q.C.: I am very much pleased at this scheme. I think that we ought of all things to consider the soldier after he leaves the military service, and when he returns to civil life. I believe there can be no greater encouragement to recruits joining the army than to let them know that they will be taken care of when they leave the army. I think the army training wonderfully adapts the soldier to civil life afterwards, especially with regard to domestic service. I would rather take a man who has been in the army, and who knows the word of command, and will submit to it, and has gained that self-respect which the soldier gains, than I would take a civilian. I wish that feeling were general; if it were so I am sure it would be a great encouragement to recruits to join the army. The lecturer has very well pointed out that we ought to consider the soldier when he returns to civil life, and he has suggested one or two expedients to attain this end. One is to look after him when he returns to civil life, and I think that it is of great importance that he should have somewhere to go to when he leaves the army. The lecturer has suggested the ribbon. Now, no one honours the ribbon which Her Majesty has been kind enough to confer on Volunteers more than myself. I believe there is a very great advantage in that distinction, not only that an officer may wear it with his uniform and civil dress, but that it is a distinction which when a man wears, and remembers that it has been conferred by the hands of Her Majesty, is an encouragement to him to maintain a steady and honourable course of conduct. I, therefore, greatly approve of that badge which a man may wear, but also on the ground that it may inspire others who see him wearing it to follow in his meritorious steps. But in these days there is something more than the ribbon which is wanted. The man wants remunerative employment. Probably the lecturer may not be aware, as he has not referred to it, that at Liverpool there is a Society established much of the same kind as he has suggested. I am very glad to be a subscriber to that Society, and to know that it is a very successful Society. I think it is called the United Service Society, but it is for soldiers and sailors who have left the army and navy.

Commander MCHARDY: An employment agency?

Lieutenant-Colonel BAYLIS: Yes. That Society keeps a register of good conduct, and of the way the men have discharged their duties, and it is a great encouragement to men, both sailors and soldiers, at Liverpool, and also to others, to see that they are looked after in civil life. After all we cannot do without money, and we must have subscribers. I am sure that the lecturer must take that into consideration, because you cannot have offices free of expense, even though they are only looked after by a pensioner and his wife. You must have funds. You must contribute out of your own pocket to the advantage of these men. I have done so in Liverpool, and I would do so in London, or anywhere where I could see any chance of improving the condition of the soldier in civil life. I think the soldier ought to have the prospect held out before him that when he leaves the army, he shall be in such position as not to degrade the army whilst wearing its uniform, by appearing as a beggar in the street. There is another point that I think should be attended to. The lecturer suggested that this Society should embrace only the army, but did not allude to the navy. We are very much indebted to the navy. We know it is the first bulwark of this country. I should like to see the navy included, and would, therefore, suggest that it should be called a Royal "United Service" Society, rather than a Royal "Army" Society. I am sure you will excuse me as an old Volunteer officer who takes a lively and deep interest in everything which concerns the army and navy, an interest which, I am bound to say, I never should have felt if I had not belonged to the Volunteer force. I hope, therefore, that my remarks will be received in the spirit in which they are intended.

The CHAIRMAN: I may explain that the Society at Liverpool is one of the branches in connection with the National Association; it is not a separate organization.

Lieutenant-Colonel BAYLIS: But it is a successful Society, as I find by the returns which are sent to me.

Captain O'CALLAGHAN: I should like to make one observation with reference to

Paragraph 65, in which there is the statement, "The wearing of military ribbons in plain clothes may at first strike many as being a novel suggestion, quite foreign and contrary to all preconceived ideas." With reference to that I would only remind the lecturer that the wearing of miniature medals on certain occasions in evening dress has been officially sanctioned for some years, and not only is that the case, but officers are expected to wear them whenever they are invited to meet any of the Royal Family. I think that does away with that objection.

Colonel J. GILDEA (Commanding 4th Batt. Royal Warwickshire Regiment): I did not come here to take any part in these proceedings, but only to listen. The scheme is really such a large one that, without more careful perusal, I do not think I could make any remarks that could lead to any good results. I may say, however, with regard to the Soldiers' and Sailors' Families Association, which has been referred to, and which I represent, and without wishing in any way to advocate our cause here, or to blow our own trumpet, that I do claim that ours was the first attempt that has ever been made to create a great national organization throughout the country, in drawing together the civil and naval and military element under the territorial system for the benefit of the Services. We have at the present time over 500 branches and divisions represented by some 1,500 office bearers, naval and military, men on the active and retired lists, as well as the leading families in almost every county in England and Ireland. Referring to Paragraph 31 of the original prospectus of this new Society, I rather gather that the lecturer had never heard of this Association, because he suggests that at such a crisis as the breaking out of war, the Royal Army Society would look after the *wives and families* of soldiers and sailors. But from the paper just read it appears that he does not intend to swallow us up altogether, but rather looks to us for help and co-operation. All I can say is, that there is room for all, and that he may be sure of my goodwill, and the goodwill of my Association, in helping him in every way in our power so long as he does not overlap or try to take the wind out of our sails. As far as my experience goes, and it extends over a good many years, I do not set much value upon royal charters, sign manuals, blue books, or any such paraphernalia in connection with such a work. My own opinion is that it can be done much better without them. Initiating and building up organizations of this kind are much more likely to be accomplished by downright hard work and perseverance, than by having too much red-tapeism. In all such works we must, no doubt, be enthusiasts ourselves, but our enthusiasm must never cease if we are going to succeed. To tie ourselves up, however, by a royal charter, with signatures here and signatures there, and subject to the supervision of Her Majesty's Privy Council, as is proposed, is to my mind in the long run only to court disaster. I am very glad to see that this is supposed to be a "voluntary" Society. I have great faith in voluntary work for many reasons. We have worked our own Society, which as I say is the largest Association connected with the Services, altogether on the voluntary system. We have no expenses whatever of any kind except the actual money spent in printing and stationery.

The CHAIRMAN: Will you tell us something as to how your Association was first started?

Colonel GILDEA: I am afraid some one besides myself must say by whom it was initiated and how formed. You will, I think, sir, not misunderstand my silence on this point. I quite believe in the voluntary system for working Societies, especially those connected with the Services. There are plenty of officers retired, and plenty of people connected with the Services, who are only too glad to give a helping hand if they are only approached in the right way, and you will also have the great advantage of placing yourself right with the public. There is nothing about which the public are so jealous as the large amounts that are spent by almost all Societies upon secretaries, offices, clerks, and administration. I am sure nobody in this theatre who knows anything about what took place with regard to the Patriotic Fund before the Royal Commission was appointed, some ten or twelve years ago, will care very much to have a repetition of matters then brought to light, and that is one of the reasons why I rather think you are hampering and tying yourselves up by seeking a royal charter and its accompaniments.

The CHAIRMAN: I think I am right in saying that you personally communicated with all the Lords Lieutenant up and down the country.

Colonel GILDEA: Yes. The first thing I did in commencing this work eight years ago was to issue a circular to every Lord Lieutenant in England, Scotland, Ireland, and Wales. That I made the foundation of the work.

Mr. G. ARNOLD (Mayor of Gravesend, D.L., F.S.A.): I venture to follow the last speaker, because I have the honour of subscribing to that excellent Society of which Colonel Gildea has spoken, and which he so worthily represents, and because I cannot see that it in any way interferes with the operations of this larger undertaking, and I hope the latter will come into fruition. The Society represented by the gallant Colonel is more of a charitable and eleemosynary (but a most excellent) institution, whereas this, sir, if its outlines are perpetuated, addresses itself to the much larger and more statesmanlike view of what should be done in regard to such an institution as the British Army, when it is overtaken by circumstances for which it is in no way responsible, and which in the same manner may overtake the State itself. A judicious statesman when he finds that the balance of political power is swaying from one direction to another, sets about the reconstruction of the administrative machine, and so here men with the same kind of prescience as you have shown, look about and say, "How can we ameliorate those social conditions which are bearing so hard upon the army?" Some persons have said, "Oh, it is a mere question of money; John Bull must undo his purse-strings and shell out more." No doubt he will have to do so, but that by no means exhausts the considerations of the question which ought to engage a General looking thoroughly into and comprehending the problem before him; for example, the amelioration of the social condition of the men, the care to be shown for them, the institutions which are erected for their comfort and improvement and their moral well-being, all tend to shed some little lustre upon their families, so that people come to say, "A soldier! why a soldier need not necessarily be a disreputable character; now he is a member of an honourable profession, which makes itself visible in various ways, he has got clubs, he has got associates," and when they find circles of "army veterans" going about with a little decoration, people of their own order especially will look up to them with a feeling of pride. The man is a veteran, and there you touch the mainspring of the power of dealing with men. You can at once control a man if you can touch the button of his self-respect, and he is responsive to the touch; then that man is capable of being improved and raised. It is because so many of our men fall into their bad habits, and have lost their self-respect, that you have had to throw up the task as one that baffles you. I understand, sir, in the plan you have laid down here (in banding together the members of the army, and showing that they are not ashamed to belong to such an imperial and successful institution as the British army has shown itself to be), that you are taking the right step to lift up and make that profession more valued than before. What have you had to contend with in the past? You have had the very lowest of the low, those who were really little more than animals (physical strength in common with quadrupeds), and you have had the higher classes, and, perhaps, the upper middle class, but the middle class, which is the great backbone of England, you have not touched. In proportion, however, as you ameliorate in this judicious way and elevate the condition of the men in the army, so you will force an attitude of respect towards that army, the profession will be improved, people will look to it as a means of combining sufficient to keep them with a sensible amount of honour and respect, and so you will be making up for that outlay which otherwise would arise if you had to treat it entirely as a pecuniary matter, and endeavoured upon a mere money basis to outbid those leviathan trades and manufactures which have such large and rapidly increasing means at their disposal for competing with you in the labour market. I have never heard of this scheme until to-day; but as the Mayor of the largest town in the Thames Valley, whilst you, sir, held the office of General of the Thames District, I had the honour of standing by your side when you inaugurated the North Kent Branch of the National Reserve Association, which I am pleased to say notwithstanding that you have left, has not fallen to the ground, but has improved. I had the honour again of standing by your side when you established the Chatham

Circle of the Veterans, and I must congratulate you very much upon the progress which these two movements have made; and this which we have before us to-day is really an imperial extension of these excellent movements. I would conclude by commending this subject very earnestly to the favourable consideration of my fellow auditors here present.

Lieutenant-Colonel A. GRUBB (R.A., ret.): This paper has given me information about a subject on which I was very ignorant before. I believe if it is circulated throughout the country, it will be taken up by all the officers of the army, and those who have left the army, because it aims at promoting the benefit and welfare of the soldiers after they leave the army, and improving their social status. There are one or two things in the paper that I should like to remark upon. First, I observe that it is contemplated to give the medal and ribbon to men of over three years' service who have served well. Now, supposing these men did not continue to serve well after having gained the medal, is it to be withdrawn from them? I happen to have had something to do with the administration of the Poor Law, having been on the Woolwich Board of Guardians for several years, and there used to come before it a number of pensioners and men who had left the army. Those who come to seek for poor law relief from no fault of their own are generally able to produce their discharges, but those who we know from experience and inquiry have been to various unions have generally lost them, showing that their character has not been of the highest order. If a case of that kind comes before a board of guardians, should the badge which it is contemplated to bestow be withdrawn? The scheme, no doubt, is a comprehensive and far-reaching one, but it will mean a great deal of cash to keep it going, and you could not start the various houses, beds, and so forth, unless you have good support behind. It will not do for an officer, or anyone else, to rent a house and then to find that he alone is liable for the rent after, perhaps, a year. He must have a fund to fall back upon, and cash at his disposal to pay the pensioner and his wife for looking after the house. I believe there has been a Society of this kind (for the relief of soldiers' families) already established, and I should be very sorry indeed to see it hampered or swallowed up by the Society of which we have heard this afternoon. I personally do not work the Soldiers' and Sailors' Association, but my wife has been a committee member of it for many years, and I can testify to the excellent work that it has done for those who are hard up, and who have left the army.

Lieutenant-General Sir CHARLES FRASER, V.C., K.C.B.: I am afraid, sir, I am not in a position to speak on this subject, although you have kindly asked me to do so. I can only say, having been a soldier all my life, that I am confident that everyone connected with the army must appreciate the exertions of Commander McHardy, and the promoters of this scheme. I wish them well with all my heart, and I wish that I were able to speak upon the subject, but I am not.

Lieutenant-Colonel J. B. RIDOUT: It struck me on reading the paper that the lecturer was not aware of the fact that a similar Society to the proposed Royal Army Society has been established by General Goodenough, and is known as the Army Veterans' Association. It also occurred to me that the lecturer was hardly aware that in addition to the Army Veterans' Association, there are other well-established Societies throughout the kingdom for the benefit of the soldier. Referring to Paragraph 31, with regard to assisting soldiers' wives when the husband is on service, I do not think the lecturer could have been aware that Colonel Gildea's organization, viz., the Soldiers' and Sailors' Families Association, was in existence. This organization is complete, perfect in every detail, and has branches throughout the United Kingdom, the Mediterranean, as well as in India. I have been connected with it four or five years, and I know how well it works. I can give one instance. When H.M.S. "Serpent" was lost off the Spanish coast, so complete was the organization, that within twenty-four hours the families of those who had lost their lives were found out and relieved; five hundred pounds having been granted from the funds for that purpose. I do not think that any Royal Army Society could manage an Association better than that.

The CHAIRMAN: The facts are that the Soldiers' and Sailors' Families Association

for some years was not directly represented in Scotland for some particular reasons. Recently Scotland has returned, I may venture to say, to the fold, and now the Soldiers' and Sailors' Families Association will again operate in Scotland.

Lieutenant-Colonel RIDOUT: Then as regards sleeping accommodation for the districts, that is also provided for. There are fifty-five large establishments in different parts of the kingdom, and I can speak especially for the establishment at Chatham, where, in fact, there are two. There is one which I take interest in, that made up no less than 14,000 beds last year, a place called the "Welcome;" and there are many of these Welcomes throughout the kingdom under admirable management. As regards the formation of the Veteran Society, with which I have had some slight connection, it is well to understand that the primary object of that Society was to unearth the old soldier, to bring him to the front, to let the world see that the old soldier was really a reliable and respectable individual. Until this movement was started at Chatham, we did not know that there were half-a-dozen old soldiers in the whole place. There were several men at Chatham from my own regiment who had known me from a lad. When this Association was started, they came forward and spoke to me. I said, "Why did you not come before?" "Oh, sir," they said, "we did not like to presume. We have stood by you dozens of times at cricket and football, but we never dared to speak to you before." Not only that, but we found comrades in the same regiment living close together who did not know each other's existence until we established the Veteran Association. It has done an infinity of good. Old soldiers no longer conceal the fact that they have been in the Service; now when they go to the Paymaster for their pension they do not any longer say, "Plain envelope, if you please." Formerly they did not like the idea of being considered pensioners, and they requested that instead of being addressed as "Army Pensioner," they should have a plain envelope, but now all is changed. You now see these old soldiers mixing together, wearing the ribbon, of which I have brought a specimen, and they meet daily at the Veterans' Club just established. This ribbon is the badge of the Army Veteran Association, and is General Goodenough's idea. It represents a piece of the Union Jack, as it were, torn off. The ribbon, which is unique in design, has been registered, and no one can get it except by applying through me. It has been received with very great favour by all the army veterans, and the Army and Navy Veteran Association of Canada asked me some time ago if they might be allowed to adopt the same ribbon as their badge. Permission was given to them, and it is now to be seen not only in Toronto and Halifax, but in other large towns throughout Canada where the organization exists. I think all we want on the part of the Royal Army Society is that they shall support existing institutions. There are many organizations well established that have hitherto languished for want of funds, and of public sympathy. If the Royal Army Society by any action on their part could bring these existing institutions to the front, and get public support for them, I think they would be fulfilling all that was desired. It would be a mistake to keep down the Army Veteran Association by having a rival Society. Let the Royal Army Society assist the parent Society, the Army Veteran, and help to extend its circles throughout the kingdom. At present we have only got the Chatham circle, and although we had one or two promises in other districts, no one yet has given it any support. I am quite sure that if in large centres, like Birmingham, Manchester, and London, circles were established, we should soon become a growing and flourishing body, and the public would see that we were seeking for the real good of the soldier and for his recognition.

The CHAIRMAN: I might draw your attention to the paragraph of the lecture which attributes to the Veterans' Association the desire "to strengthen the link that binds the soldier in civil employ with his comrades serving in the army." That was the point to which I wished to direct your attention, because the answer would come better from you than from me.[1]

Brigade Surgeon F. P. STAPLES: It seems to me that some of the last speakers

[1] Lieutenant-Colonel Ridout explained at this point that a declared object of the "Veterans'" was to weld a link with the old officer, not with existing soldiers.

have been very much impressed with fear that their Societies would be absorbed. As I understand Commander McHardy, his scheme is meant to form, as he called it, a swivel or social link to connect the army reserve with civil life. I think that is especially needed. While I was stationed at Chester, some years ago, I had the opportunity of seeing something of the army reserve, having, as medical inspector, to go round the district. I saw many old soldiers, and made inquiries as to how they were getting on. I found that Messrs. Laird, of Birkenhead, employed them very largely, and were favourable to the idea of employing them from patriotic motives. The Chief Constable of Macclesfield also employed them very largely in the police, but, with those two exceptions, I think, they were allowed to shift for themselves pretty well; and I take it altogether they had a rather hard time of it. A good many of them found employment, no doubt, but if a Society, such as that proposed, had been in existence, I think they would have had a better chance of finding an entry into civil life. My next experience was at Brighton after I left the Service. There was a man there that I had known very well in the Royal Artillery at Aldershot, an assistant to a riding master, an excellent man, and one of the best riders I have ever known in the army. When he was a non-commissioned officer he took his discharge, having saved a little money. He came to Brighton, and started a tobacconist's shop in a street where, to my certain knowledge, there were a good many other such shops, and in about six months the whole of his savings were gone, and he was stranded. I think if there had been a Society like Commander McHardy has proposed, that man would have been able to ask advice in a large town like Brighton, where he was a stranger, and would, perhaps, have been better advised with regard to the investment of his savings. These may be comparatively small matters in their way, but I think they tend to show that the lecturer's very far-reaching scheme is most especially needed with reference to the army reserve.

Captain G. C. SWINTON, Highland Light Infantry: As a regimental officer who has had some experience in the working of a regimental association in the district in which Commander McHardy began the work, may I be permitted to say that the gentlemen who have spoken seem most of them rather to have lost sight of the crux of the matter, which I take it is the honour of the ribbon? Now, I know, speaking of the old soldier, or at least of Scotchmen, that the thing some of them quarrel with as regards these ordinary associations, is the idea of the acceptance of charity. I do not think they would quarrel with the idea of wearing a ribbon by means of which we should recognise in civilian garb those who have been our best soldiers, and are now among our most respectable citizens. It would be granted by the Queen, and they would be proud to show it. The bad lots we have always with us, and they vaunt themselves as soldiers; those who succeed, the world knows only as civilians. To give an instance of how they drop out of sight. Only the other day, I found out that a man whom I knew well by sight, and who lived within four miles of our depôt, a fine-looking respectable man, and a large employer of labour, had been pioneer corporal in my own regiment. He had left soon after the Mutiny, he knew nobody now serving, and nobody knew him. Yet he was a keen enough old soldier to travel to Edinburgh for our regimental gathering, and he came with four medals on his breast. That is the class of man that a royal army ribbon would parade as a credit to the Service. If the Prince of Wales and the Duke of Cambridge led the way, and if every officer and ex-officer when in mufti, be it frock coat, or evening clothes, or shooting clothes, if every man who left the Service with a good character wore the ribbon, then we should show that the army breeds others besides loafers and ne'er-do-weels. It seems to me that the whole crux of the matter is the ribbon.

The CHAIRMAN: I should like to give the lecturer an opportunity of speaking upon this point of the ribbon. There are one or two things to be considered. One is modesty about wearing it, which has been very well disposed of by one gentleman, who called attention to miniature medals being more commonly worn now than formerly; and another is that in conferring the ribbon you give a badge of character, and might, perhaps, cast the reflection of bad character upon others who do not wear the ribbon. That is one of the difficulties to be contended with, that a man wearing the ribbon rather puts somebody else in the shade, and when

it comes to be done upon a very large scale it will be one of the difficulties to be dealt with when you are deciding upon whom the ribbon should be conferred.

Colonel C. G. SLADE (Commandant School of Musketry): I gathered from a previous speaker that a ribbon is already issued to the Army Veterans.

The CHAIRMAN: The rules were very carefully drawn up, and the representative Committee of the Veterans can refuse to admit a man into their Society unless he is of good repute.

Colonel SLADE: Would not the ribbon issued by this Society rather clash with the ribbon already existing in the Army Veteran Association?

The CHAIRMAN: I do not think we have got to that point yet.

Colonel SLADE: I should not like to throw any cold water upon the suggestion, in fact, I think the idea of the establishment of a Royal Army Society is an admirable one, if it can be thoroughly carried out. We must, however, bear in mind that this has been started, and very thoroughly gone into, by one county only; my fear is that you may not get every county in the kingdom, with all the Lords Lieutenant and Deputy Lieutenants and the organizing machinery set forth in the prospectus, to take it up with the same thoroughness as has been done by the one county of Lanark. That was a point that was not touched upon by the lecturer for obvious reasons. You want two things to make a Royal Army Society a grand success: you want, in the first place, enthusiasm all over the kingdom, and, in the next place, you want, as was said by another speaker, a good round sum of money.

Major-General MITFORD: I should like to know how the lecturer proposes to prevent people who are not entitled to wear the ribbon from wearing it, because at the present time you can go and buy the ribbon for any medal you like at the stores, and put it on. There is nothing to prevent you wearing it, if you choose, except your own good feeling. That seems to be a difficulty.

Lieutenant-Colonel RIDOUT: The ribbon of the Army Veteran Association can only be supplied through the executive officer of the Association. You cannot go to a shop and buy it. That is our protection.

Commander MCHARDY: I have to thank every one who has commented upon this scheme for the great assistance that they have rendered to us. I do not think there have been any criticisms raised that have not been fully considered by the Committee, and if the objections have not been met in the paper it is wholly my fault, because there has not been one single thing mentioned this afternoon that the scheme, as understood by us, does not entirely meet. The paragraphs to which General Goodenough kindly drew attention—73 and 74—are supposed to conflict with some part of the scheme, but I do not quite see how. Those paragraphs point to the necessity of not considering it wise or expedient to bring the soldier in civil employ into intimate contact and association with the soldier who is on active service and the various institutions that such soldier is connected with. The Army Society proposes to have only members who are of assured good army character. Supposing, for the sake of economy, you establish your rendezvous at some institute. You do not deprive the less worthy soldier of the use of the institute. You do not say that you will not allow him to come and improve himself in the institute, because the institutes are used to a very great extent for the purpose of bringing good influences to bear upon men who require such good influence. Now any such a connection would entirely mar much of the work of the Royal Army Society. We do not wish our members to mix *compulsorily* with anybody excepting themselves. They are civilians, and we look upon them as civilians. They have rendered their good period of service to Her Majesty, and they have a perfect right to be left entirely free of military employment and military associations. There are undoubtedly a large majority who would enjoy sharing everything with their former comrades, but we want to get *everybody* of good conduct, whether they wish to continue their connection with the army or whether they do not wish to do so, and for that reason, amongst others, we particularly wish it to be understood that the Royal Army Society, as to its administration, its funds, and everything connected with it, is to be kept entirely distinct from other Societies. I do not know whether it was right to make the suggestion, but unquestionably the proposal that the Royal Army Society should, *in a serious crisis*, come forward and

assist to raise funds for other Societies might justify the impression that we were going to do their work. Now, if they object to our raising money for them, then we certainly will not raise money, but that is the only way in which we propose to meddle with any other Society. I thought that this was made sufficiently clear when I said that every charitable or benevolent Society that assisted soldiers by means of charity would be treated by the Royal Army Society as any other charity is treated, whether an orphanage or a hospital. It is not a case of rivalry; there is and can be no rivalry, for the Royal Army Society will occupy a higher plane. Colonel Baylis referred to the Employment Society at Liverpool. That is a branch of the National Association which I dealt with in the paper, and, as I thought, sufficiently clearly. The National Association is for the employment of discharged soldiers, and it has devoted itself entirely to that work. We think that the establishment of a Royal Army Society on the footing that we propose will facilitate that work very much, but we do not intend to undertake it by their methods; we do not intend to have anything to do with keeping a register of unemployed soldiers. We may ask the National Association and others to allow us to make copies of their registers, but the duty will not be interfered with; it will lie still with the National Society. Colonel Baylis I do not think understood why this Society does not *at present* include the navy. Perhaps it was partly for that reason it was thought a naval officer might with advantage introduce the subject here for discussion. The navy, I may be allowed to say, and I hope it will not be taken offensively, does not at the present moment require lifting up in the same sense that the soldier does. The sailor is very much better circumstanced. As a matter of fact, you do not find that the Queen's sailor has difficulty in getting good employment; he can generally get it, and the opinion of the promoters of this Society was that, while it might benefit the Society to bring the sailor into it at the present time, it certainly would not reflect any extra honour on the sailor. But it has not been lost sight of, because, in addressing the proper authorities and personages on the subject of the ribbon, which, of course, is not a matter for our selection, it was asked that the future including of the navy in the same Society and making it a Royal United Service Society should be considered, as probably the two Services might, with advantage, use two distinct, but somewhat corresponding, ribbons. Captain O'Callaghan mentioned the fact of persons wearing military medals in plain clothes. We were quite aware that the desire for officers wearing these military decorations is one that has been expressed from quarters where it might certainly have been expected that it would have been most readily attended to; but we believe it is the experience of a good many people that army officers, as a rule, do not generally wear miniature medals, even in plain evening dress; they do not like to do so. One man has six medals, another man has none, and it may be thought that the man who has six medals makes himself rather conspicuous. I pointed out in the paper that there would be nothing of that kind, that there was no question of one man being superior to the other: they would be all alike. With regard to the remarks that Colonel Gildea was kind enough to make, I may say that his book has been our standard work of reference in preparing the scheme for this Society. We were able, in his book, to find information which we could not get anywhere else. It is published by Colonel Gildea, but he seems to have entirely mistaken the view of the promoters of this Army Society. It cannot do the work that the Soldiers' and Sailors' Families Associations are doing, and all those other 150 societies; but what we can do, or imagine we can do, is to create a new class of society, of which one only exists at the present moment—"The Veterans;" and when Colonel Gildea brings out the next edition of his book, I would suggest to him that he should, under a new heading styled "Honour Societies," first name the Veterans' Association Chatham Circle, and secondly the Royal Army Society, as Societies which really exist in order to transmit and maintain the honour earned by faithful army service, and for that purpose only. That will meet some of the objections brought forward by those who think that the question of finance is a very serious one. Finance is a serious question to Lanark, because the Royal Charter, which is not thought very much of by Colonel Gildea, will cost money, and the Parliamentary Statute to protect the ribbon will cost money, and this, unless the Government see it reasonable to assist us, will all fall upon the county

of Lanark. They will have to obtain the charter for the whole kingdom, and any county may at any future time take advantage of the charter without any further expense. A statute will be required to protect the ribbon, and such a one as to inflict criminal penalties on any person who infringes it; for we consider that nothing short of such penalties would prevent people, for their own evil purposes, making an improper use of the ribbon. How it is to be done is a matter of detail, which will have to be considered when the rules are framed. It is not my place to suggest what the Governing Body should do, but they may arrange that the Executive Council shall meet once a month, or less often, and shall have power to strike any names off the roll, if they think fit; they may have a quarterly or other meeting of Governors to consider any case remitted to them by the Executive Council, or to hear the appeal of any person who thought he had been hardly treated. It is not, I fancy, proposed that, simply because a man is unsteady, he should be deprived of a ribbon which he has once obtained by his good army record; but it is intended that, for an offence that would cause an officer's name to be removed from the Navy or Army List, a man should be liable to be taken off the roll of the Royal Army Society. A royal charter is considered to be a very valuable and necessary document for us to have, because it will protect the status of the Society for all time. There is no question of signatures being wanted, and that sort of thing. A certain form has to be gone through, and if Her Majesty and the Privy Council think fit, the charter will be granted, and will remain in force as long as our present constitution lasts, viz., till Doomsday. The Patriotic Fund was one of our warning beacons. No doubt that fund pointed to the terrible disadvantage of a large scheme, started in a hurry, for raising money without any local organization or connection with a fixed body having a local knowledge to advise as to its distribution. We think that the Royal Army Society, with its separate council and corporation, responsible only for its own work in each county and each great city, will prevent the chance of anything such as has happened in the case of the Patriotic Fund. If we were at war to-morrow, and it were required to raise large funds, no better machinery could be devised for the purpose than the Royal Army Society, not only to raise the funds and disburse them to the various societies required to administer them, but the governing bodies of the Royal Army Society would retain the necessary confidence required to make the money flow in, in far greater sums than even was the case with the Royal Patriotic Fund.

Colonel GILDEA: But into your Society and not into the others; into your Society and out of ours.

Commander MCHARDY: Undoubtedly largely into ours, but for your use. The Royal Army Society does not require it; it does not cost anything to transmit honour. We think for our own purposes it may be advisable to have a few small rendezvous, and that is the only expense that will be incurred. We think that in large industrial centres it is absolutely necessary to make some provision, so that when a young soldier, say from India, with no knowledge of our civil life, comes back to a large industrial town he may be put in a position to protect himself, and not simply be as a young inexperienced man going into civil life, even more helpless than a boy of fourteen who has been brought up in civil life. It would make him independent of the people who might take advantage of him. It would enable him to meet with one or two friends, and we think would be of great assistance to him. There is no expense worth mentioning in connection with these few small rendezvous, or that will have to be incurred for any purpose to keep the Royal Army Society going, and the Royal Army Society has no intention of raising money specially, unless it is asked to do so by other Societies.

Colonel GILDEA: War breaks out: you make an appeal to the country, and I make an appeal to the country; what will the country think?

Commander MCHARDY: They may think it better to give it to our Royal Army Society, but, as I said before, *for your use.*

The CHAIRMAN: I am really afraid that we cannot proceed to the second reading, and we can hardly pass this through committee to-night. We shall have to conclude all the same.

Commander MCHARDY: Colonel Gilden asks what will be done? The Royal Army Society would not move for the purpose for which the Soldiers' and Sailors'

Families Association exists—it would not move in the direction of obtaining funds for that purpose without the special request of the Soldiers' and Sailors' Families Association. I have to thank you all and everyone very much.

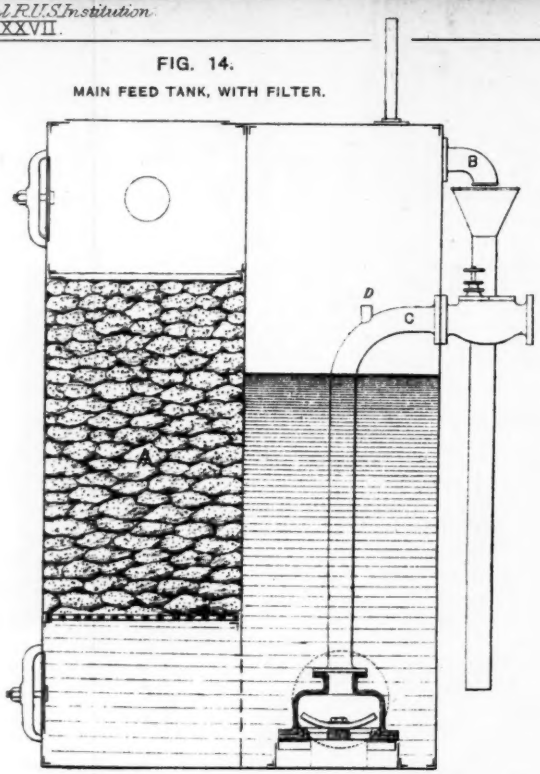
The CHAIRMAN: The scheme we have had before us seems to have undergone a good deal of progressive study. From what I can judge of the two papers that have been circulated, this progressive study is rather of a marked character, and things have been put in the second paper that were not in the first. I only allude to that in order to emphasize this remark that such a project requires much study, particularly with regard to the form of government proposed, before it can be safely launched upon the world. At the same time I wish to emphasize the welcome that is extended in this room to the adoption of the scheme in its general scope. I think it is a great mistake to try and cast all schemes of this kind into one mould. This has come from Scotland, and Scotland has its own peculiar views and institutions and so forth, and it is very natural that a Society of this kind should be somewhat different to one promoted in the South of England, such as the Army Veterans' to which allusion has been made. I think Captain O'Callaghan was a little misunderstood. His point was that just as we have overcome the reluctance to wear miniature medals in the evening, so we might overcome the reluctance to the wearing of a ribbon by such an Army Society.

Captain O'CALLAGHAN: I mentioned that it has been officially sanctioned; that is my point.

The CHAIRMAN: And practically adopted. The general advantage of the scheme in its tending to develop the voluntary system in England is a feature of great importance, as was touched upon by the Mayor of Gravesend in his observations. The fact of there being more than one scheme started about the country to endeavour to achieve this object of popularizing the army is a proof, to my mind, that the "psychological moment," as the French writers call it, has arrived for getting something done. It seems to me that our English method is that a plan crops up here and a plan crops up there, and then after these have gone on for some time we come to learn more about the subject, and we mould those plans into one, and perhaps establish something upon a better footing than we should have done if we had endeavoured to start full fledged at the first outset. I understand that one great feature of this Army Society, as to its management, is to work through existing organizations; it starts with the Lords Lieutenant and the Deputy Lieutenants, who at present are not overburdened with duties, and on the basis of that existing organization it proceeds. But still I cannot help thinking that on the whole a good deal has to be done in defining more precisely the methods of government of such a Society. My own view, if the lecturer will allow me to say so, has been all along that such a Royal Army Society should aim at occupying the highest position of all Military Societies, that it should recognize each and all of the other Societies, whether charitable or otherwise, which work in connection with the army, co-operate with them and promote them, and put their clients—the men who have served in the army—in the way of benefiting by them. If its promoters adopt that as their platform they will, I think, achieve very good and salutary results. I will now propose a hearty vote of thanks to Commander McHardy for the pains he has taken in drawing up in such an admirable manner the scheme which he has brought before us to-night.

FIG. 14.

MAIN FEED TANK, WITH FILTER.

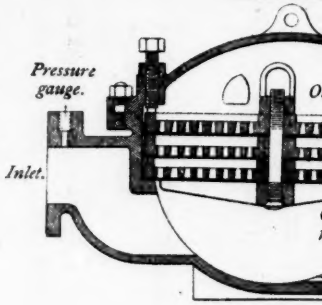


a. Sponge filter.
b. Overflow to bilge.
c. Overflow to reserve feed tanks.
d. Air holes.

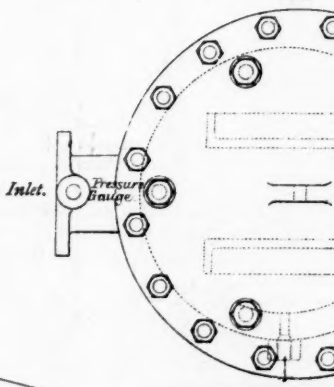
FIG. 1

EDMISTON FILTER FOR M

VERTICAL SECT



PLAN.



Grease discharg

FIG. 16.

ARRANGEMENT OF FILTER FEED PIPE.

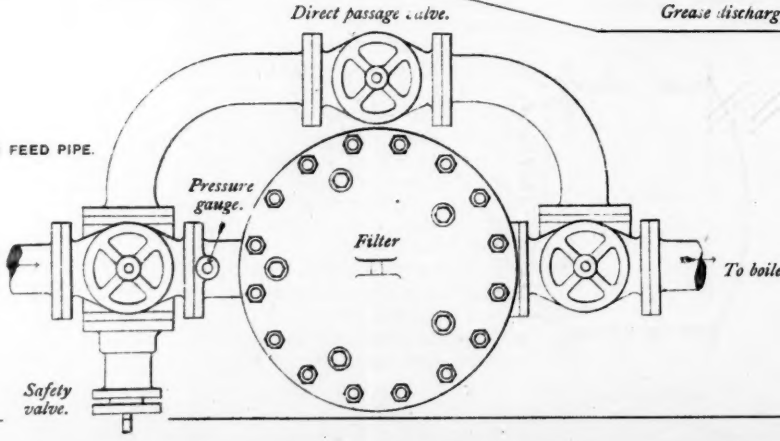
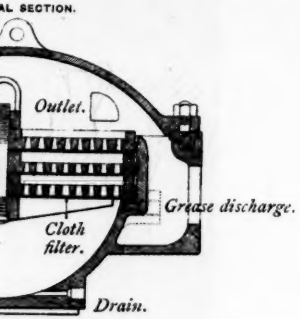


FIG. 15.

FOR MARINE BOILERS.

AL SECTION.



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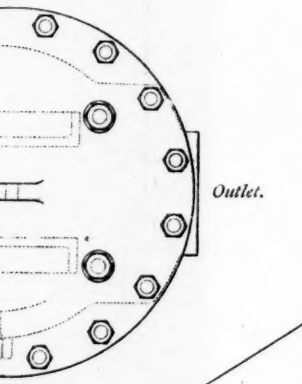
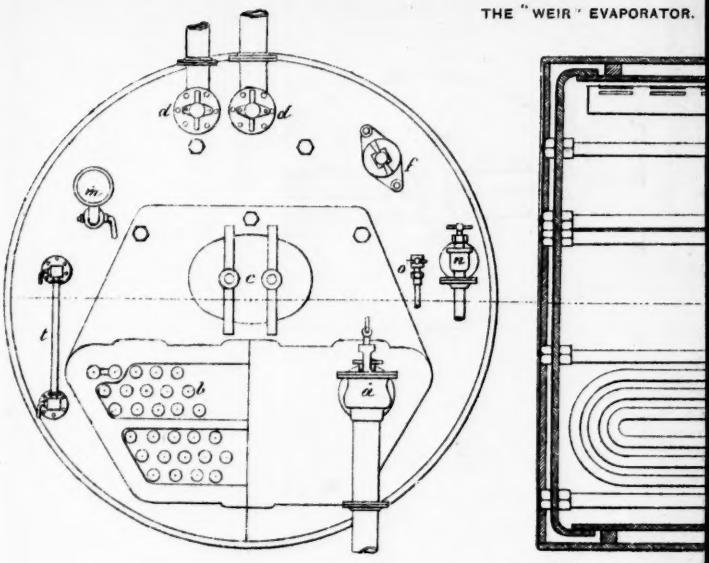


scharge.

FIG. 18.

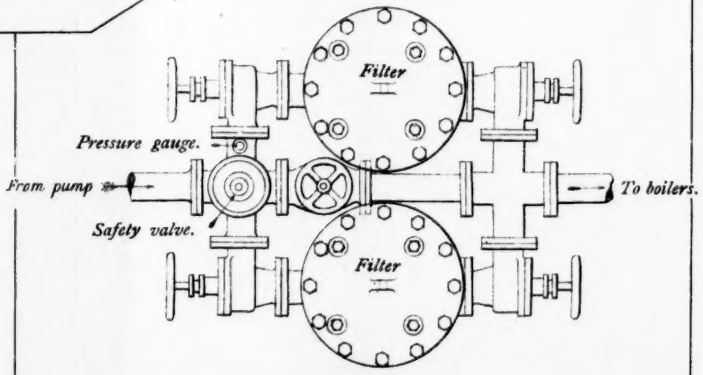
THE "WEIR" EVAPORATOR.



a. Steam inlet valve.
b. Heating tubes.
c. Manhole door.
d, d. Steam stop valves.
f. Safety valve.
t. Water gauge glass.
r. Blow out valve.

FIG. 17.

ARRANGEMENT OF TWO FILTERS TO FEED PIPE.



o boilers.

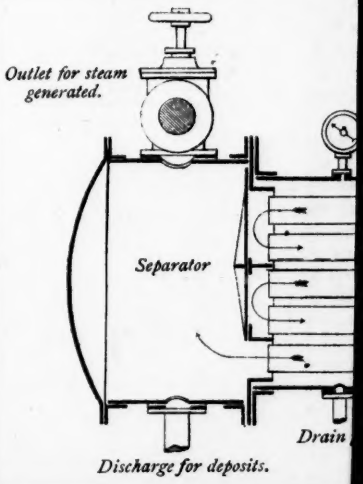


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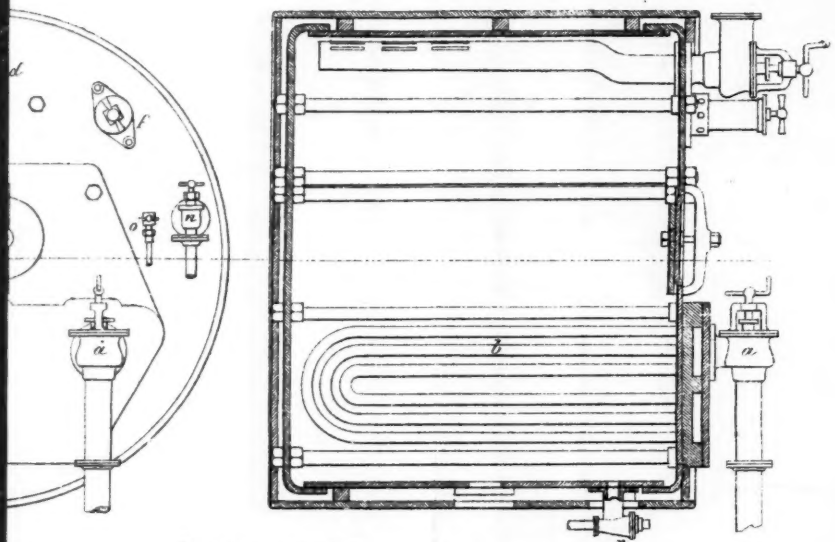
FIG. 18.

THE "WEIR" EVAPORATOR.



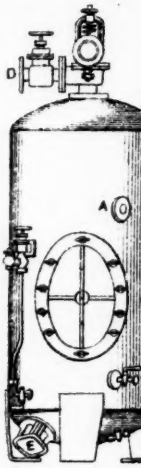
let valve.
tubes.
door.

d. d. Steam stop valves.
f. Safety valve.
t. Water gauge glass.
r. Blow out valve.

m. Pressure gauge.
n. Feed valve.
o. Brine valve.

FIG. 19.

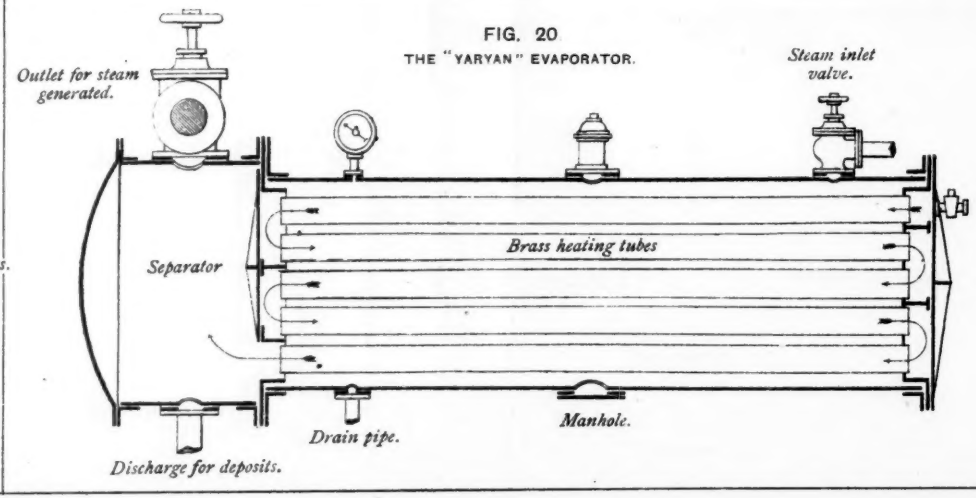
THE "KIRKALDY" EVAP



a. Steam inlet to spiral heating tube
b. Outlet to condensed steam from heater.
c. Outlet valve for ste generated by heate
e. Outlet for deposits.

FIG. 20

THE "YARYAN" EVAPORATOR.



ons. Lith. St. Martins Lane W.C.

19.

EVAPORATOR.

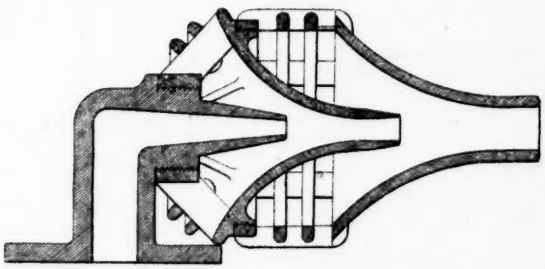
o
ng tubes.
densed
heater.
for steam
heater.
posits.

Salt water inlet.

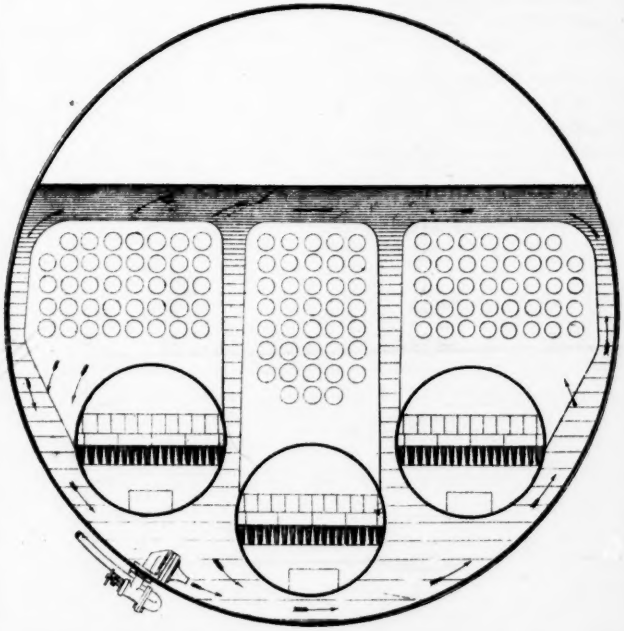
FIG. 21.

WATER CIRCULATORS FOR BOILERS "WEIR TYPE."

DETAILS OF CIRCULATOR.



ARRANGEMENT OF CIRCULATOR ON BOILER.



FOREIGN SECTION.

RECENT PROGRESS IN MARINE MACHINERY.

By NABOR SOLIANI.

(Translated from the "Rivista Marittima" for February, 1893, by T. J. HADDY, R.N.)

(*Continued from No.* 180.)

Feed Tanks and Filters.—The principal office of the feed tanks is to collect the fresh water delivered by the air pumps when this is in excess of the quantity withdrawn by the feed pumps, and to furnish a supply to the latter when the quantity delivered by the air pumps is insufficient. To fulfil this office satisfactorily it is necessary that the feed tanks should be of ample capacity, but as space on board ship is restricted, it is not possible to make them so large as is desirable, hence the necessity of fitting them with overflow pipes to discharge the water when the tanks are full. Formerly it was usual to discharge the surplus water into the bilges, but this led to a great waste of fresh water, especially when the boilers primed, that is, when it was most necessary to preserve it. For this reason it is preferred to discharge the surplus to the fresh water reserve feed tanks usually fitted in the double bottoms, and of which I shall treat further on; the discharge to the bilges is only used in order to get rid of the oily matter which accumulates at the water level in the feed tanks. The feed tanks, are, therefore, fitted with two overflow pipes, one situated nearly at the top, discharging into the bilges, and another lower down, discharging into the reserve feed tanks above mentioned. The latter tube is fitted with a regulating valve, and a non-return valve to prevent the water flooding the feed tank in case of injury to the double bottoms; this tube takes the water from the bottom of the feed tank, and is so fitted that it ceases to act when the water level is reduced to about two-thirds its maximum height (Fig. 14). More recently the main feed tanks have been made in two compartments (Fig. 14), in the first of which the feed water filters through sponges or wood fibre, and in the second the water is collected, and withdrawn by the feed pumps, or sometimes the water from the feed tanks is made to pass through special filters in its passage to the boilers from the feed pumps (Figs. 15 and 16); experience will decide which of these two methods is to be preferred. For the injurious effects of fatty deposits in boilers see the article by Professor V. B. Lewes, on "Boiler Deposits," published in the "Transactions of the Institution of Naval Architects," 1891.

Two filters for each main engine (Fig. 17) are fitted in ships in-

tended to make long voyages, and one only (Fig. 16) in those which only make short passages. In both cases the filters are so fitted to the main feed pipe that they can be shut off and the feed supplied direct to the boilers. Of course this filtration of the feed is not necessary when other means of efficient purification have been provided. The accessories of the main feed tanks are—a water gauge tube in two or three pieces to show the level of the water in the tank; a small cock for emptying the tank, and manhole doors to give access for cleaning them internally; zinc plates are also fitted to prevent internal corrosion. The collective capacity of the feed tanks should be at least equal to a half cubic metre for each thousand I.H.P. developed by the engines at maximum power. In each engine room a small steam pump or injector is fitted for the purpose of pumping water from the reserve feed tank into the main feed tanks when necessary; this practice would appear preferable to fitting a connection from the reserve feed tanks to the main condensers.

Evaporators and Fresh Water Reserve Feed Tanks, for Supplementary Boiler Feed.—In modern ships the consumption of fresh water in the main and auxiliary engines, through leakage of water or steam, drains, &c., is considerable, in spite of every care and expedient which may be used to diminish this consumption. A few years ago, when compound engines working at a pressure of 90 lbs. were in general use on board ships, it was customary to make up for this loss by taking the supplementary feed supply from the sea, and this practice appeared to be satisfactory, but directly after the adoption of triple expansion engines working with steam at 150 lbs. to 180 lbs. pressure, it was seen that the practice could not possibly be continued on account of the injury caused to the boilers. By reason of the more elevated temperature of the water in the boiler and of the heating surfaces, the calcareous deposit becomes hard and adherent and very difficult to remove, so that it gradually acquires sufficient thickness to cause all the injury inseparable from such incrustations. Means were then thought of for providing the necessary supply of fresh water, and at first a sufficient quantity was held in reserve to last the entire voyage. In many cases, especially in merchant ships with double bottoms, this plan answered well, and is simple, practical, and inexpensive; but for ships of war, which must be to a large extent self-reliant, it was necessary to couple with the above system a means by which the fresh water could be produced on board so as to render the ship, as far as regards her fresh water supply, entirely independent of outside aid. For this purpose evaporators are fitted which generally take the form of a boiler containing sea water, in which the heating surface of the tubes is heated by steam, instead of the gaseous products of combustion. The heating steam, after being condensed in the tubes of the evaporator, is discharged into the feed tanks and returned again to the boilers, whilst the new steam generated by the evaporation of the sea water in the evaporator is either admitted to the low-pressure cylinder of the main engines, or discharged into the main or auxiliary condensers; in either case the fresh water thus produced by the evaporators ultimately reaches the main feed

tanks, from which it escapes by the overflow pipes to the reserve fresh water tanks, if not required for the boilers. When the auxiliary condenser is used, care must be taken that it is clean, and the fresh water first formed should be rejected if greasy. It is a good rule to collect the fresh water first in the small tank attached to the auxiliary condenser, and to discharge it from the tank directly to the reserve feed tanks or to the main feed tanks, taking care to take the water from a point below the water level in the small tank to avoid any deposit of grease which may be formed there, and if there are filters fitted on board it is of course desirable to filter the water before delivery to the reserve feed tanks.

We have in the Royal navy, one may say on trial, the "Weir" evaporator (Fig. 18), "Kirkaldy" (Fig. 19), and the "Yaryan" (Fig. 20). The first evaporators of the "Kirkaldy" type worked with a vacuum, that is, with the steam chamber in communication with the condenser of the main engines; the advantage of this plan was that the carbonates only were precipitated, forming soft powdery incrustations easily removable, but at the same time the vacuum favoured the formation of large volumes of vapour with violent ebullition and consequent priming, by which the sea water was carried into the condenser. For this reason the more recent evaporators are worked at a pressure in the steam chamber equal to, or a little above, that of the atmosphere. It is necessary that the heating tubes of the evaporators should be easily removable or otherwise fitted for cleaning and removing the incrustations, and a spare set of tubes should be supplied on board, so that one set can be in use while the other is being cleaned without the fresh water supply being interrupted. In the "Yaryan" evaporators the sea water to be evaporated circulates inside the heating tubes very rapidly, so that the salts are carried over with it into a chamber for collecting the sediment, and from which this sediment can then be easily removed.

Reserve Tanks.—The reserve fresh water tanks are generally in the double bottoms, if there are any; this part of the ship being so constructed that it is possible to fill or empty them, there is little else to do in order to render them suitable, wholly or in part, for the stowage of fresh water for the boilers. It is desirable that the whole of the double bottoms of the ship should be fitted for use as reserve fresh water tanks on emergency, but at the same time it is well that the parts intended to be used under ordinary conditions of service should be determined on and kept distinct from the remainder. The total capacity of the reserve tanks, if there are more than one, should be, if possible, sufficient to hold a quantity of water which would maintain the necessary feed supply to the boilers during continuous steaming at a moderate speed of 9 or 10 miles an hour for as long as the coal would last. To fulfil these conditions the capacity of the reserve tanks in tons should be about one-fifth of the coal supply. The tanks should be divided into few compartments, so that the accessories may be as simple and few in number as possible, and generally a reserve tank occupies the whole of one compartment of the double

bottom between two watertight frames, and is divided into two compartments by the vertical keel, one of which serves for the starboard and the other for the port engine. They must have a special arrangement of filling and suction pipes, with stop valves and suction boxes for each compartment, and also—(*a*) a branch on deck or overboard fitted with a union for taking water from vessels or tanks alongside; (*b*) a branch connection to the auxiliary feed pumps, and to the small pump or injector supplying the main feed tanks, or to the condensers if other means of supply are wanting. None of these pipes are in communication with the main feed pumps, it being considered better practice to leave them undisturbed in their suction arrangements. There is also a second system of pipes, which has already been noticed, for the discharge of the surplus water from the main feed tanks; these are in two distinct parts, so that each feed tank discharges only to its own reserve tank compartments. With the connections above described, the entire capacity of the reserve feed tanks is practically added on to that of the main feed tanks, as the latter can draw from the former to supply any deficiency, and discharge into them when the supply is in excess of the demand, as the case may require. Each compartment of the reserve feed tanks is fitted with a stop valve and union, and a similar valve and union are fitted to each of the boilers, so that when they are kept full they may be run down to the working level by allowing the excess water to flow into the reserve tanks. To each compartment are also fitted an air escape pipe extending above the level of the load water line, a sounding tube for measuring the contents of the tank, and zinc plates for protecting them from corrosion.

Natural Fresh Water.—Fresh water obtained on shore for the reserve feed supply for the boilers contains solid matters in solution, although in a less degree than sea water, which become insoluble in the boiler and are precipitated.

These solid matters are composed, however, almost exclusively of carbonates of lime and magnesia, without a trace of sulphates, which are very abundant in sea water, and which form the most dangerous incrustations in boilers.

This difference explains the advantage of using fresh water for the supplementary feed instead of sea water, and the advantage is made more evident in the following table, by comparing the average constituents of sea water with those of fresh :—

Composition of Sea and Fresh Water; Solid Matters in Hundred Parts of Water.

	Sea water, Atlantic.	Fresh water.	
		Serino.	Thames.
Chloride of sodium	2·6521	trace	0·0026
Sulphate of lime	0·1305	0·0098	0·0043
Carbonate of lime	0·0103	0·0128	0·0154
,, magnesium	0·0065	—	—
Chloride of ,,	0·2320	0·0025	0·0021
Sulphate of ,,	0·1890	—	—
Silica	0·0114	trace	0·0008
Oxide of iron and aluminium	trace	..	0·0004
Organic matters	..	..	0·0034
Total	3·2318	0·0251	0·0290

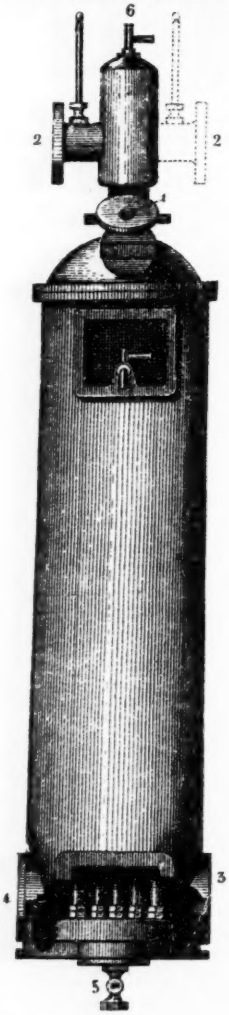
It is well to add that although distilled water on account of its purity is preferable to natural water, yet from the point of view of the preservation of the boiler, the advantage lies with the latter, the distilled water favouring ready corrosion of the plates unless its action is modified by the addition of soluble saline substances. Professor Lewes, in order to obtain the advantages of both, proposed purified sea water for the supplementary feed of the boilers, separating from it, in a special apparatus, all the calcium salts it contained, but leaving behind the chloride of sodium and the other soluble salts which rendered it inactive on the boiler plates. The apparatus of Professor Lewes, consisting of a steam boiler, in which the sea water is chemically treated with soda, has given excellent results on trial, but, as far as I know, has not yet been extensively applied on board ship.

An interesting article on this subject, "Marine Boiler Incrustations and their Formation," was published by Professor Lewes in the Transactions of the Institution of Naval Architects in the year 1889. Chemical "purifiers" similar to those of Professor Lewes have had, however, an extensive application in industrial establishments on shore, and it may be desirable, also, that our Royal Dockyards should be able to furnish purified sea water, not only for the land boilers but also for those on board ships.

Circulators, and the circulation of the Water in the Boilers.—The influence that the circulation of the water has on the evaporation and on the preservation of the boilers is remarkable. If the circulation is not active and complete, in the first place the evaporation is not regular and continuous, but takes place spasmodically and with projections of water, and in the second place the various parts of the boiler are maintained at different degrees of temperature, causing unequal expansions and internal strains, with consequent leaking at the seams and the ends of the tubes. Circulation occurs naturally

in boilers, although it may be weak and incomplete, by reason of the water becoming lighter and more vaporous at the more heated parts, and forming there ascending currents, which require that descending currents should be formed at the cooler parts. But this natural circulation is often insufficient, especially when the boilers are working under forced draught, or accelerated combustion, and it is necessary to increase it by means of diaphragms or thin tubes, which favour the formation of descending currents at the less heated parts, and keep them separate from the ascending currents, or the currents are produced or accelerated artificially by means of steam or mechanical circulators. Diaphragm circulators are much used in ordinary marine boilers, and they are generally in the form of rectangular conductors of thin sheet iron placed vertically between the different nests of tubes, and between these and the shell of the boiler. Although useful and efficient when the boilers are in full work, they are of little or no use when raising steam, as a stratum of hot water is then soon formed at the upper part of the mass of water, the lower part remaining cool even after the steam has been raised in the boiler to its normal working pressure. In this period of slow formation of steam, the natural circulation, or circulation favoured by diaphragms, is insufficient to heat the water at the lower parts of the boiler, and the plates at these parts are inevitably subjected to severe strains and deformations which it is highly desirable should be avoided. The other methods of artificial circulation are circulators worked by steam or mechanical means: the first are on the principle of the Giffard's injector, and they are applied at the bottom of the boiler where the water is coolest. During the period of raising steam, the steam can be taken from the auxiliary boiler on board in order to excite the circulation from the beginning, when it is most useful in preventing differences of temperature. Fig. 21 shows one of the circulators of the Weir type, as fitted to the boilers of the "Piemonte;" for single-ended cylindrical boilers one of these is sufficient, and two are enough for large double-ended boilers. For service in war-ships, these steam circulators are very useful, as they can be used for heating the water in the boilers that may be required for use, while under way, before lighting them up. Mechanical circulators are also very efficient; in some ships the same pumps are used for the circulation as for the feed, when, by means of an appropriate disposition of pipes, the cold water is drawn from the lower parts of the boiler and discharged into the upper, but it may happen in this plan that the cold water may descend again almost at once and the circulation not be effective. In order to obtain the required result with greater security, it is better to effect it in the contrary direction, that is by drawing the hot water from the surface and discharging it into the lower parts of the boiler; this method can also be employed while raising steam by using the pump of the auxiliary boiler. A more practical plan would appear to be the employment of small centrifugal steam pumps of the "Garnier" type, as already applied with much success to the boilers of the "Forbin" and "Surcouf" in the French navy. These small pumps, which can be worked by hand while raising steam, make the circulation in the

FIG. 22.
THE "KIRKALDY" HEATER.



1. *Steam inlet.*
2. *Warm water outlet to boilers.*
3. *Water inlet.*
4. *Water inlet.*
5. *Condensed steam discharge.*
6. *Air pipe.*
7. *Cock for soda solution.*

FIG. 23.

THE "ODERO" HEATER AND

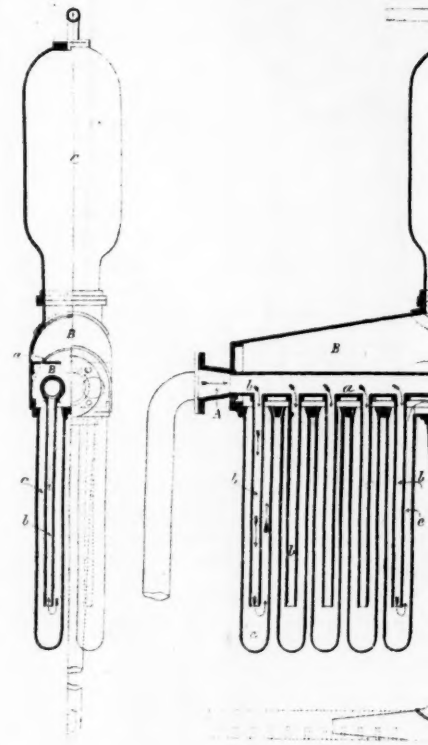
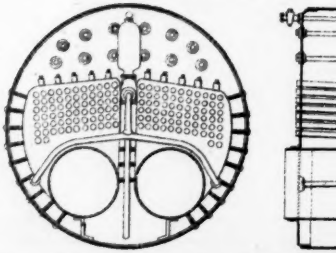


FIG. 24.

INSTALLATION OF THE "ODER
IN AN ORDINARY MARINE



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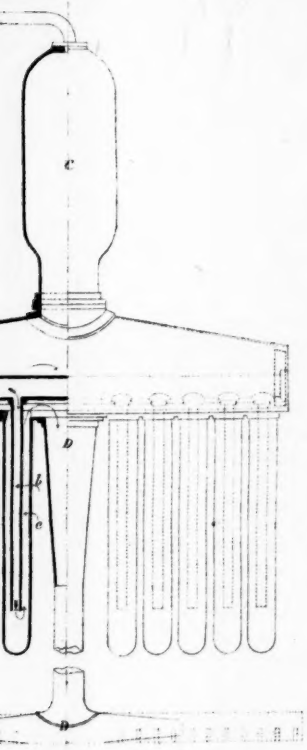
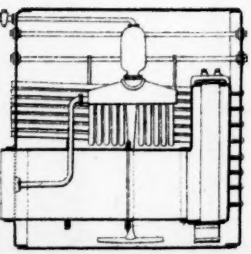
3.

R AND PURIFIER.



4.

"ODERO" PURIFIER
ARINE BOILER.



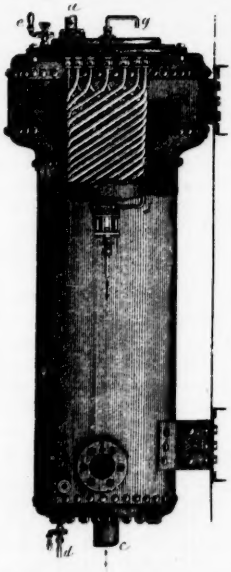


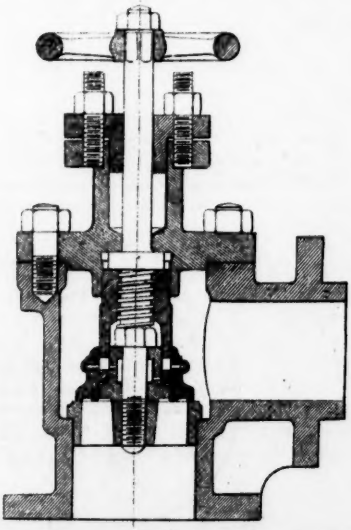
FIG. 25.

THE "HENNEBERG" HEATER.

a. Steam inlet.
b. Water inlet.
c. Heated water outlet.
d. Condensed steam discharge.
e. Soda cock.
f. Blow out for deposits.
g. Air escape.

FIG. 26.

FEED REGULATING VALVE FOR BOILERS "BIANCHETTI" SYSTEM.



manner just mentioned, drawing the water from the upper, and discharging to the lower, part of the boiler. They should be kept in use also when the boilers are in full work in order to favour the evaporation and render it more regular; and they can be used to heat the cold water in one boiler by means of the hot water from another.

Feed Water Heaters.—With the same object of diminishing the differences of temperature at the different parts of the boiler, and to obtain greater economy of fuel, it is usual to heat the feed water before its admission to the boilers. This is done either by steam or by the products of combustion, but we may neglect any further mention of the latter method, which has been found very inconvenient in practice. The heating is effected either externally or inside the boiler itself; in the first case, the steam is taken either from the low-pressure cylinder exhaust, from the low-pressure receiver, from the auxiliary exhaust steam pipe, or directly from the boilers to which the feed is supplied. In the first, second, and third cases a considerable economy of fuel is obtained, but the heating effect is small; in the last case the results are *vice versâ*. To obtain both advantages—heating effect and economy of fuel—the water should be heated in two stages, first with the exhaust steam or steam from the receiver, that is with low-pressure steam, and then with high-pressure steam from the boilers. It would not be difficult to combine a duplex heater of this kind, a low- and a high-pressure heater.

In all our torpedo-boats of the Shichau type, and in ships of the "Partenope" class with Shichau engines, the heating is effected in the first manner in the same condenser, which is divided into two compartments, the smaller of which is at the top and forms the heater proper, and receives the steam direct from the cylinder exhaust; the steam thus cooled and partly condensed passes then into the lower compartment which is the true condenser, and is there completely condensed and cooled. The tubes of the heater are expanded into the tube plates, those of the condenser are fitted with glands in the usual manner. The feed water is caused to circulate through the tubes of the heater by the feed pumps before being supplied to the boilers. In this manner the temperature of the feed water can be raised about 120° F. with a sensible economy in fuel, about 5 per cent.; and to this may in part be attributed the remarkable thermal efficiency of the Shichau engines. The economy is less if the feed water is heated with steam taken from the receiver of the L.P. cylinder, because in this case steam is abstracted before it has performed work in the L.P. cylinder; but both economies may be obtained by heating the feed water first with the exhaust steam, as first described, and then with steam from the L.P. receiver, that is in two stages. To utilize the steam at the greatest advantage, it would be better to take the supply from the L.P. cylinder just before exhaust by means of a special valve; but this would cause complications, and the best way of all, in my opinion, would be to use the exhaust steam from the auxiliary engines before its entry to the auxiliary condenser; since, for reasons which will be stated hereafter, its pressure is sensibly equal to that of the atmosphere, and it is waste steam. With this steam the temperature of

the feed could be raised about 160° F., and an economy of about 3 per cent. obtained. Finally, as has been already said, the temperature of the feed may be raised almost to the boiling point by heating it with steam taken from the boilers, whether it has been already partially heated or not, and this can be done either by external or internal heaters. By heating the water in this way there would not appear to be any advantage at all from a thermal point of view, the same heat only being given back to the boiler in the feed water which has been abstracted from the steam for the purpose of heating it. In practice, however, repeated experiments have shown that there is a decided gain in economy, which reaches to 5 per cent., and is due probably to the fact that the feed water, raised almost to the boiling point, absorbs heat much more readily from the heating surfaces of the boiler, which thus become much more effective and efficient. By reason of this fact of economy, and the high temperature to which the feed water can be raised, simple high-pressure heaters have gained much in favour. In our navy these high-pressure heaters are being fitted to all ships in course of construction, and gradually to those already constructed. As yet two types of these heaters have been tried, viz., the "Kirkaldy" (Fig. 22) external; and the "Odero" (Figs. 23 and 24) internal.

In the "Kirkaldy" heater, the water, from a branch of the main feed pipe, enters the lower part of a vertical cylindrical chamber containing a number of spiral tubes, through which the steam passes from the top to the bottom, and the heated water passes out from the top of the chamber to the boilers; the condensed steam is collected in a compartment at the bottom below the heating chamber, and is led by means of a pipe fitted with a regulating valve into the main feed tank. If it is not desired, or it is found impossible from any cause to use the heater, the connections can be closed and the feed water supplied direct to the boiler. In the heating chamber the water parts with some of its impurities, so that the heater has the further advantage that it acts as a feed water purifier; air and fatty substances collect at the upper part of the heating chamber from which they can be discharged by means of a small valve, the solid matters being deposited at the bottom of the chamber, and can be removed when the apparatus is cleaned internally. The "Odero" heater, which also acts as a purifier, is fitted inside the boiler, and forms in a certain sense a terminal appendage to the internal feed pipe. Fig. 23 explains sufficiently clearly the form of the apparatus. The water in passing through the numerous tubes becomes heated and gives up the air and fatty substances it contained, and these are collected in the upper dome; the heated and purified water then descends to the lower part of the boiler, where the saline matters are deposited. With the "Odero" apparatus the water is heated to practically the temperature of evaporation, and one may say is perfectly purified; it has the defect, however, as applied above the combustion chambers or heating surfaces, that it is somewhat complicated and cumbersome, and it must be tested by practical experience on long voyages before any definite opinion can be given on its merits. In the Royal Navy ex-

ternal and internal heaters of other types are on trial, but it would be premature to speak of them at present, besides which they all resemble each other more or less, and are based on the same principle. Fig. 25 represents the "Henneberg" heater in use in the German navy. The heaters now described are all "surface" heaters, but there are also others, "mixture" heaters, which depend for their action on direct contact between the steam and the water to be heated; with these, however, the water has to be pumped twice over, once into the heater, and again from the heater into the boiler, which constitutes a defect. Heaters serve very well to maintain the various parts of the boiler at nearly equal temperatures when in full work, but not during the period of raising steam, when circulators must be employed.

Feed Regulating Valves and their Internal Feed Pipes.—One defect to which feed regulating valves are frequently subject is the rapid wear of the valves and their seatings, caused by the hammering action which takes place between these parts, and in order to obviate this various forms of valve have been invented. One of these, Fig. 26, is the idea of Signor Bianchetti, Engineer of the Navigazione Generale, and adopted by this Company in many of their steamers. The valve is so made that a cushion of water is formed when the valve descends and prevents the heavy blow on the seating, the imprisoned water finds an exit by means of the tangential holes through the body of the valve, and in issuing causes a small circular displacement of the valve, thus insuring that it never falls exactly on the seat with the same parts in contact; the displacement is circular, so as to preserve the form of the seat and the edges of the surfaces in contact. The feed pipe is usually prolonged inside the boiler, sometimes ending above in the vicinity of the water level, at others below between the tubes and near the tube plate, discharging upwards with a view of promoting the circulation at this part of the boiler. In the first case care must be taken that the mouth of the pipe is sufficiently below the normal water level to prevent any risk of its becoming uncovered through the rolling of the ship, otherwise the valve would be subjected to violent shocks which might cause its rupture. For the same reason it is desirable that the feed regulating valve should be fitted low down on the boiler. With internal feed heaters, the internal feed will of course be led into them.

(*To be continued.*)

FIG. 3.

FIG. 1

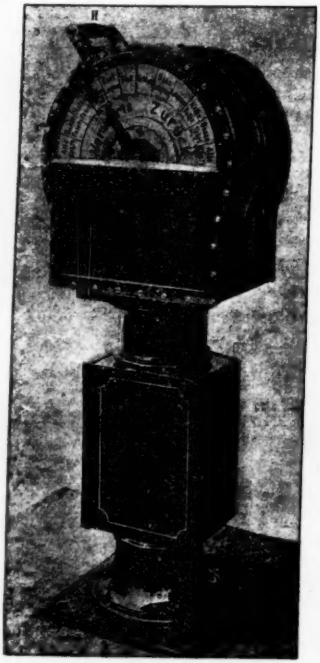
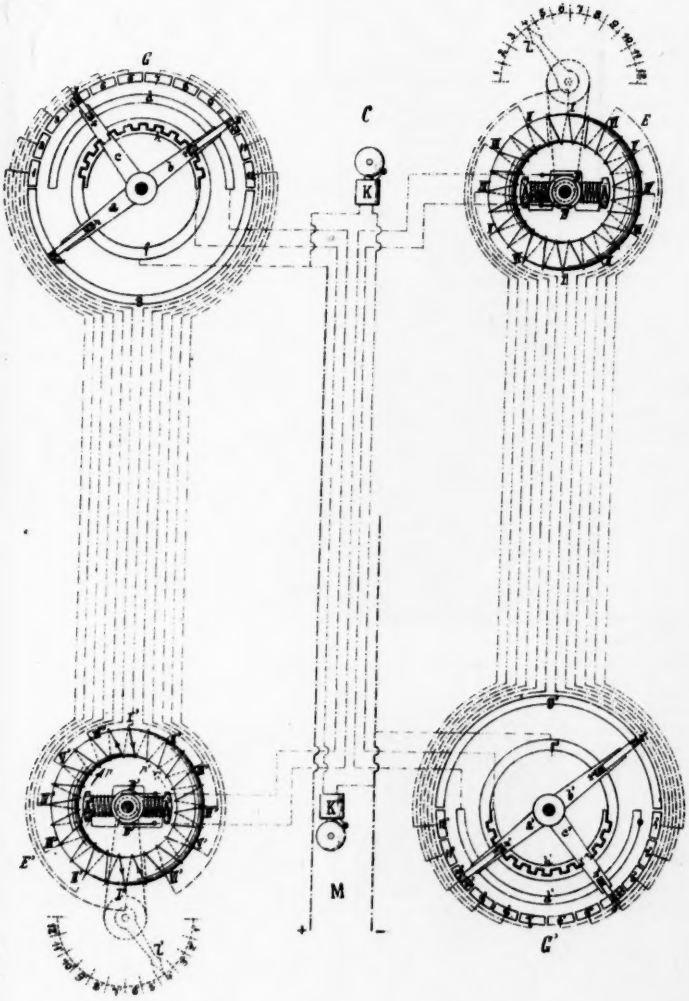


FIG. 2

HARRISON & SONS

FIG. 4.



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ENGINE ROOM TELEGRAPH BY SCHUCKERT & CO., NÜRNBERG.

(Translated from the "Mittheilungen aus dem Gebiete des Seewesens," by T. J. HADDY, R.N.)

THE question whether electrical or mechanical engine room telegraphs are more suitable for use on board ships, especially war-ships, is one on which opinions are very much divided. It is allowed that the connections between the transmitter and receiver are lighter and simpler in the case of the electric telegraph, repairs are more easily effected, and less skill is required for these repairs than in the mechanical; less confidence, however, is usually felt in the electric than in the mechanical fittings, and the former necessitate a large number of connecting wires, which are subject to short circuiting and other disturbances due to atmospheric and other conditions unavoidable on board ship. An entirely trustworthy, simple, and strongly constructed electric telegraph which is certain in action and reliable in transmission, even under conditions of violent shocks and vibrations, and which can be easily transported to different positions which are most suitable for command and control, would be calculated, no doubt, to overcome to a great extent prejudice against them, and counterbalance the undoubted disadvantages arising from the greater number of the connections, as against the mechanical apparatus. The "Schuckert" telegraph is extremely simple and very strongly made, and entirely free from delicate details on which its action depends, which is the common defect in instruments of this kind. It consists, briefly, of an ordinary electro-motor which takes up and maintains a definite position under the influence of the electric current, and as separate wires are required for each position of the motor, a large number of wires are necessary; so that for twelve orders of command and the same number of answers, with the additional wires for call bell, twenty-nine leads are necessary. The Schuckert telegraph is designed to work by the current from a dynamo, and to be used on ships fitted with the electric light, in which the dynamo must be kept constantly going day and night. It would not be impossible to work it by means of an electric battery, but, as a strong and constant current is required and the circuit is kept closed, great difficulty would be experienced, and consequently the employment of this apparatus is unfortunately limited to a great extent.

Fig. 1 is a view of the deck apparatus, Fig. 2 shows the receiver in engine room, Fig. 3 the internal mechanism, and Fig. 4 the electrical details and connections of transmitter and receiver, both of which, as far as internal fittings are concerned, are alike. In Fig. 4 the deck apparatus is shown at the top, and marked C, the engine room

apparatus below, marked M, and both contain transmitter G and receiver E (G′ and E′), enclosed in a single case, and in the figure, G G′ must be supposed to lie behind E E′, respectively. The deck instrument is supported on a pedestal, the engine room one is suspended from overhead hangers, and the dials are illuminated by lamps enclosed in their cases. The working of the telegraph is as follows:—The lever of the deck instrument H is moved to either side, and set together with the attached index J (Fig. 1) over the required word of command to the engine room. The attention of the engineer is called by the sounding of an electric bell in making the above movement, and the index Z of the engine room apparatus (Fig. 2) follows the movement of the deck indicator, and remains at the same position as the one on deck, J. The engineer then moves the lever H of his own apparatus, and brings its index J to the position coinciding with the pointer Z, and in so doing the pointer Z of the deck instrument is revolved electrically and brought to agree with its own index, showing that the order has been correctly received and understood. The speed with which the lever is worked from one position to the other has no influence whatever on the correct action of the instrument. The attention of the engineer, if he does not answer at once, can be called by working the lever to and fro slightly, and so ringing the bell, and in the same way the attention of the officer on deck may be called by the engineer. The details of the instrument can be understood by means of the descriptive plans in Fig. 4, in which it is to be understood that similar parts of deck and engine room instruments G and M are distinguished by similar letters, the latter by the addition of a dash ′ over the letter.

The receiver E (E′) consists of a fixed Gramme ring of iron, wound with a continuous spiral wire. In agreement with the number of orders that it is desired to transmit, the coil is divided on the ring into the corresponding number of equal segments connected to the conducting wires I I, II II, III III.... VI VI, and I′ I′, II′ II′, III′ III′.... VI′ VI′, respectively. In the centre of the ring is an iron armature, A A (A′ A′), free to revolve about the centre, and around which is coiled a magnetizing spiral, the ends of which are attached to two insulated rings on the axis of the armature. The current is led to the magnetizing spiral by means of the brushes B B (B′ B′), so that the armature is continuously maintained magnetically excited with its poles constant. If the current is sent to the Gramme ring by means of the conducting wires I I (I′ I′), for example, it will become a ring magnet with its poles in the direction of the diameter I I (I′ I′), and the armature A A (A′ A′) will take up a position with its poles in the same direction; in this way it will be easily seen that it is possible to make the armature take up any of the positions, II II, III III, &c., by sending a constant current through the corresponding conducting wires and divisions of the Gramme ring. For example, if the current enters the coil of the receiver ring E′ at the top position I′, and leaves it at the bottom position I′, as shown by the arrows, then at the top of the ring there is a south pole formed, and a north pole at the bottom; and if the current is sent in the

opposite direction the poles will be reversed. Since the polarity of the armature is constant, in both cases it will take up a position in the direction of the corresponding diameter, but in the first case will revolve in the direction of the arrow *p*, and in the latter case in the direction of the dotted arrow *p'*; there is therefore for each change in the position and direction of the current in the ring a definite position of the armature, and under the strong magnetic influence this position is held very powerfully and securely. The conduction of the current in the required direction to each position is effected by the transmitter G (G'), which is provided with two conducting plates, *d* and *f*, connected with the current generator, and over which the three-armed lever, *a*, *b*, and *c*, can be moved by means of the handle H (Figs. 1, 2, and 3). The arms *a* and *b* are in magnetic connection, and have contact springs *m* and *n* and *r* and *s*; the third arm, *c*, is insulated from *a*, *b*, and is fitted with the contact springs *x* and *y*. The third conducting ring *g* is continuous for half its circumference; the other half is divided into twelve separate contact pieces, 1, 2, 3, &c., corresponding to the number of separate orders which it is required to transmit. By means of the contact springs *m* and *n*, *r* and *s*, the arms *a* and *b* are put in connection with the conductor *f* and the before-mentioned contact pieces, and by means of the springs *x* and *y* of the arm *c*, connection is made between these contact pieces and the conductor *d*; each of the contact pieces 1, 2, 3.... 12 is connected by separate conducting wires to each of the divisions I' II'.... VI' of the Gramme ring of the engine room or deck instrument. Two contact pieces separated from each other by an interval of 90°, for example, 1 and 7, 4 and 10, &c., are always in connection with segments of the Gramme ring coil diametrically opposed, that is for the above positions with the segments I' I', IV' IV'. For instance, if the current enters by the conductor *f* (+) and leaves by the conductor *d* (−), then, as long as the arm *c* is moved between the contacts 1 to 6, the current will enter on the right-hand side of the Gramme ring in receiver E', and will leave by the left side, and *vice versâ* in moving the arm *c* over the contacts 7 to 12. In the first case the arm *b* makes the connection between *f* and the contacts 1 to 12, and, in the latter case, the arm *a*. When the arms *a*, *b*, and *c* are worked by means of the handle H, at every displacement of 15° the armature is acted on, and is set strongly in the direction of the new magnetic field, and at the same time the arm *a* or *b* makes short contacts with the electric bell K (K') by means of the interrupted contact piece *h*.

As can be perceived by the Fig. 3 and indicated in Fig. 4, the armature A A (A' A') makes a complete revolution for each complete movement of the handle H from side to side, and as the different orders are arranged in a semicircle, both on transmitting and receiving instruments, the pointer Z (Z') is not fitted directly in the axis of the armature, but on a separate axis geared to the former by sprocket wheels and chain, in the proportion of 2 to 1. As the current is continually flowing in order to hold the armature fixed, it was feared that the apparatus would have an injurious effect on the

compass, which is usually fitted in its vicinity; but it was found that at a distance of 1 m. only, the influence on the magnetic needle was very slight, and by further equalizing the strength of the poles in the armature and ring, the disturbing influence was reduced to a practically insignificant amount.

The author (M. Burstyn) states that he has often proved the instrument, both at the Electrical Exhibition, in Frankfort-on-Main, and at the manufactory, and has always found it to act readily and accurately, the indications being extraordinarily powerful and secure.

ENGLAND'S POSITION IN THE MEDITERRANEAN.

(Translated from the "Deutsche Heeres-Zeitung," of February 8, 1893.)

"EGYPT is the key to the Suez Canal!" That she is fully alive to this fact, England has shown by her recent exceptionally rapid and energetic action in her dealings with the Khedive. She is far less concerned about her influence over Abbas Pasha than about maintaining the control of the De Lesseps waterway—the road to India, China, Japan, Australia, and the South Seas. Were this not the case she would long since have evacuated Egypt, in order, by so doing, to better her position at the Golden Horn. Since the approach of a strong European land force to the Canal from the north still lies in the dim future, and is not at present to be apprehended, Egypt still remains the key of this waterway. Moreover, whoever possesses Egypt possesses also Port Said, Ismailia, and Suez.

Within the last two years, however, the balance of power in the Mediterranean, both on land and sea, has been considerably altered, to England's disadvantage. England is a State whose entire possessions, both mother country and colonies, have cause to fear all contact with any foreign Power which is possessed of an army. One has only to bear in mind what a constant source of anxiety Canada has always proved to her. Still greater anxiety has been caused by Russia's approach to India. It is true that Germany and Russia have for centuries existed side by side, without any very great apprehension with regard to each other, and without one Empire being in anticipation of being swallowed up by the other. On the other hand, it is a very plausible and generally accepted fact that, so soon as the boundaries of Russia shall have become co-terminous with those of India, that country will be lost to England. That this can be thus easily effected is, however, not quite true. The position is somewhat similar in the case of Suez. The French have now succeeded in doing what the English have failed to do, namely, in obtaining a firm foot-hold in North Africa. It is, moreover, not to be denied that Algeria has a future before it. Tunis, Fezan, and Morocco, seats of a former civilization, and more especially Egypt, are, however, far more valuable than Algeria. French influence, backed up by French bayonets, is continually on the increase, and England is utterly unable to cope successfully, for any length of time, with this forward movement. The settlement at Biserta, and its expansion into a first-class naval station, can hardly have a reassuring effect. It in no way increases the value of Malta, but rather the reverse; whilst it has

long been recognized as a harbour for offensive action directed against Italy. The entrenched camp in Sicily was constructed solely as a means of protection from an offensive movement from Africa based upon Biserta. Since 1882, after the famous bombardment of Alexandria, the object of which has never yet been ascertained, and the results of which, from an artillery point of view, were lamentable, Egypt has been occupied by England. All the demands for its evacuation which have, from time to time, been more or less energetically put forward by the Sublime Porte have remained simply unanswered; and even if the sum total of the army of occupation only amounts to 3,400 men, the Egyptian army, properly speaking, is largely officered by Englishmen, and is, in consequence, not a very great source of danger.

It is, however, not on shore alone, in North Africa, that England's position has become more difficult; precisely the same state of affairs exists at sea. It is true that the strong places of Gibraltar, Malta, and Alexandria, as well as Port Said and Larnaca, afford valuable supporting points for the fleet; but what alone will maintain supremacy at sea is the fleet itself. So long as England's Mediterranean squadron was superior, both in strength and in preparedness for war, to every adversary in those waters, so long was England the ruling Power. This was once the case—it is so no longer.

Of the two strongholds, Gibraltar and Malta, the latter is by far the more important. It has a garrison of some 10,000 men, and, moreover, possesses the good harbours of Marsa Sirocco to the east, Melleha, St. Paul's Bay, Marsa Muscietto, and the Grand Harbour to the north, all with good approaches and good anchorages. The two last-named, separated by the peninsula La Valetta, are deep, have numbers of rocky tongues shooting out into them in the form of moles, and are strongly fortified. La Valetta is at once the central point of the telegraph cable system and a place of call for several lines of steamers. There are also at Malta large arsenals, hospitals, and coal depôts, as well as docks; since 1892 a new dock has been constructed, capable of receiving the very largest battle-ship.

The Rock of Gibraltar has a garrison of 5,000 men and an armament of about 500 (according to other accounts, 2,000) guns, mostly powerful, short, obsolete muzzle-loaders. Last year there were mounted, near O'Hara's Tower, a Moorish castle (*sic*), a battery of 30-ton guns, as also two 110-ton guns, of which latter it was said that they could command the Strait. It is a grave error to imagine that Gibraltar can close the passage by means of her guns, for the distance from the southern extremity of the Rock to the nearest point on the north coast of Morocco amounts to something over 14 miles; whilst the narrowest passage, which, however, is in the hands of Spain, is only 8 miles wide. This last lies between Gualminsi Tower, on the so-called Pigeon Island, in front of Tarifa, and the Point of Cires. Gibraltar can provide accommodation for 18,000 men, and has also stores of coals, provisions, and equipments in so far as the restricted area will permit. Alexandria, Larnaca, and Port Said are torpedo-boat and coaling stations.

The fleet, which forms the main element in England's strength, consisted, two or three years ago, as it does now, of from ten to twelve ironclads, with a corresponding proportion of lighter vessels and torpedo-boats. It is a singular fact that France, which has attained such very bad results from her torpedo-boats, more especially during the great naval manœuvres, has, nevertheless, more than 200 of these craft, and is still busily engaged in procuring others; whilst England, in spite of the great successes achieved by the torpedo-boats during the autumn naval manœuvres, has apparently neglected this particular branch of naval warfare. Little has been done recently towards strengthening the Mediterranean Squadron, with the inevitable result, which was bound to follow from the exertions of the French, that it is—for the time being—inferior, and, indeed, very considerably so. During the last few years England has contented herself with withdrawing such ships as the "Agamemnon," "Orion," "Téméraire," and "Thunderer," and replacing them by newer and stronger vessels, such as, for instance, the "Camperdown," "Trafal-

Name.	Tons.	Speed in knots.	Nature of the principal armament.
			1st Class Battle-ships.
Victoria	10,470	17	2 110-ton 16¼-inch guns, 1 29-ton 10-inch gun, 12 6-inch guns.
Sans Pareil	10,470	17	Same as "Victoria."
Trafalgar, Nile	11,940	17	4 67-ton 13·5-inch guns, 6 4·7-inch Q.F. guns.
Camperdown	10,600	16	4 13·5-inch guns and 6 6-inch guns.
Collingwood	9,500	16	4 45-ton 12-inch guns and 6 6-inch guns.
			2nd Class Battle-ships.
Inflexible	11,880	14	4 81-ton (M.L.) 16-inch guns, 8 4-inch guns.
Dreadnought	10,820	15	4 38-ton 12½-inch (M.L.) guns.
Edinburgh, Colossus	9,420	15	4 45-ton 12-inch guns, 5 6-inch guns.
			Armoured Cruisers.
Australia, Undaunted	5,600	17	2 22-ton 9·2-inch guns, 10 6-inch guns.
			Protected Cruisers.
Phaeton, Amphion	4,360	17	
			Torpedo Ram.
Polyphemus	2,640	18	

gar," and "Nile," which are first-class battle-ships, whilst the "Benbow" was replaced by the "Sans Pareil." The number of armoured cruisers and protected vessels still remains small. The "Polyphemus," a torpedo-ram, and the only one of its class, is of questionable value. At the present moment the Mediterranean Squadron consists of twenty-six vessels, of which twelve are armoured and three protected (see p. 403).

As against these, France has collected at Toulon some three-fourths of her naval forces. Not counting the reserve vessels, which have been placed out of commission, she has there five divisions consisting of 15 ironclads, from 8 to 10 protected cruisers, 5 torpedo-cruisers, 5 torpedo-catchers, and 15 sea-going torpedo-boats, making a total of 5 squadrons of 40 vessels available for service at any moment. In addition, the first-class battle-ships "Marceau," "Magenta," "Hoche," and "Neptune" have recently been added. The reserve divisions, completely armed and equipped, have half their crews on board, and are ready to put to sea within twenty-four hours.

This powerful force is undoubtedly superior to the English squadron, the greater portion of which exercises in two divisions, the Eastern and the Western, whilst the remainder either cruise or remain stationary at Malta, and it is not to be conceived that this superiority has not been sufficiently early recognized in Great Britain. It is, however, in England, held to be a matter of necessity that the mother country must, in the first place, be protected in such a manner that no enemy shall be in a position to approach England. In order to carry out this view, a strong Channel Squadron is required on the one hand, and a numerous reserve class of ships on the other. Up till quite recently it was a matter of impossibility for England, after this last effort on the part of France, to maintain her superiority in the Mediterranean, and as it was necessary, under all circumstances, to be secure, the well-known treaty, or agreement, was concluded with Italy. In the event of the English naval force in the Mediterranean being strengthened by the seven already completed battle-ships of Italy, as well as by the latter's numerous fast protected cruisers, all the efforts on the parts of the French would certainly be of no avail.

It has been said that "the Triple Alliance alone supports England in Egypt." Although this is putting the matter rather bluntly, still it cannot but be agreeable to both Germany and Austria to find that France has a rival in North Africa; whilst the fact that the first naval Power will not permit an adversary to approach offensively—with the object of making a descent on her somewhat inviting coasts—must be hailed with joy by Italy.

It would indeed fare badly with England were she to place too much reliance upon her allies, and it is now her intention to put another complexion on the state of affairs before the expiration of next year, and, to a certain extent also, during the course of this year. At the present time, seven battle-ships of 14,150 tons, two of 10,000 tons, seven cruisers of from 7,300 to 7,700 tons, and a number

of smaller vessels of from 3,300 to 4,200 tons have been completed. A number are already in commission; others, though not yet in commission, have long since undergone their trials. It requires no very keen sense of perception to foresee the probable reorganization of the Mediterranean Fleet. The second-class ironclads "Edinburgh," "Colossus," "Inflexible," and "Dreadnought" will be withdrawn, and will be replaced by two vessels of the "Anson" and by two of the "Royal Sovereign" class. There will also be added one more vessel of the latter type, and a 10,000-ton armoured vessel. The oldest of the light vessels will be relieved by a larger cruiser and six smaller ones. England can effect such reorganizations at one stroke, for the means which were voted in 1889 were sufficient to procure, in an incredibly short space of time, a fleet large enough to convert any State into, at the very least, a second-rate naval Power. All the Powers taken together have not so many steel-decked cruisers as will be possessed by England on the completion of the scheme for increasing her naval forces. Much has been both spoken and written in respect of the shortcomings of the British navy. Such shortcomings are, however, not confined to Great Britain alone. They are moreover of but minor importance, since either those deficiencies which have been brought to light really exist—in which case their discovery will be advantageous, since it will be the means of effecting a remedy for them; or they do not exist—in which event there will be no difficulty in proving such to be the case. It, however, certainly cannot be denied that France is ahead of England in the manufacture of both guns and armour-plating. The famous, or rather notorious, 110-guns are, of course, out of the question; on the other hand, France now undoubtedly possesses very good guns, and is far ahead of England in the construction and adaptation of quick-firing guns. It is ludicrous that England should only now be going over to the construction of steel and nickel armour-plates, whilst they had long since been manufactured by Messrs. Schneider, of Creuzot. On the other hand, the capacity of dockyards and private firms for the production of large ships of modern type is in England about double that in France. For instance, the large French vessel, the "Marceau," took seven years to build, whilst the English "Royal Sovereign" was constructed in less than three years.

Even if it be granted that England will succeed, at great sacrifice, in maintaining her position as chief naval Power in the Mediterranean, the duties imposed upon her Mediterranean Fleet are so numerous that it will certainly not at all times be in a position to prevent France from sending reinforcements to Algeria, and it is this which constitutes England's greatest source of weakness. "Whilst it is but a small matter for France to send a force of 15,000, 20,000, or even 30,000 men to North Africa, with a view to the attainment of some special object, England cannot even dream of sending there a force of equal numbers and of equal value."

Even with the diminutive garrisons which are maintained in the Mediterranean—garrisons which are without either cavalry or field artillery—it would still be possible to draw upon them for reinforce-

ments should these be required to meet emergencies! All that sounds very nice, but in the three Mediterranean garrisons there does not exist one single soldier of either cavalry or field artillery; whilst the combined strength in infantry only amounts to 7,000 men, which would certainly not permit of more than 2,000 being withdrawn for expeditionary purposes. Such a force may possibly suffice to impress Abbas Pasha, but could hardly gain many laurels when opposed, for instance, to Franco-Algerian troops.

Germany (Prussia), although she has hitherto always sought for, and found, her safety in the assumption of the offensive, has allowed herself in the most extraordinary manner to be forced, by the Triple —or possibly Quadruple—Alliance, into the assumption of the defensive. This is more especially noticeable with regard to the coast. In the north, Russia, by establishing a naval port at Libau, has made a step in advance westwards; whilst in the west, France is converting Dunkirk into the main depôt for an offensive squadron. In the Mediterranean, France is advancing, in North Africa, towards Italy and Sicily, and is fortifying Corsica. This is certainly not done with a view to assuming the defensive, for neither Italy, nor any other Power, would wish to attack either Corsica or Biserta, if these places were not fortified. Russia, from Vladivostock, is making her influence felt both in China and Japan and, by constructing a fleet for offensive purposes in the Black Sea, has made herself a source of considerable anxiety to the Sublime Porte. In Egypt, too, France has already succeeded in making her influence felt to a very considerable extent.

That Power which is hard pressed by its opponent must be content to remain on the defensive, and must be satisfied to abandon the great advantage, which is possessed by the offence, of having it in its power to choose the time and place of action. England, by her energetic action in Egypt, has merely shown that she does not mean to give up territory which ensures to her the control of the Suez Canal, and that she is determined, if not entirely to abandon her attitude of defence, at least to defend by force of arms that which, if it does not already belong to her, will probably fall to her share in the future.

FRENCH SMALL-ARM SMOKELESS POWDER.

According to M. Pouteaux, in his work "La Poudre sans Fumée et les Poudres Anciennes," Dijon, 1892, the smokeless powder used in the ammunition for the French Lebel rifle, Pattern 1886, consists of a mixture of two parts of insoluble, to one part of soluble, nitro-cotton. He gives the following description of the manufacture:—"The above mixture is worked under light runners with 2 per cent. of paraffin and 20 per cent. of water, until it becomes thoroughly homogeneous. The very fine pulp thus obtained is pressed between some absorbent material to reduce the amount of moisture to about 5 per cent. The cakes from the press are broken up, and sifted on sieves of 0·6 mm. mesh, to thoroughly divide the material. The powder is dried and then submitted to the action of ether alcohol. The compressed paste is next rolled into sheets 0·5 mm. thick, and afterwards cut into squares the sides of which are 1·5 mm. long." As regards the properties of this powder, M. Pouteaux says that "it gives no smoke on firing and leaves no residue in the barrel except a few unconsumed grains. If well made, a charge of 2·8 gm. (43·21 gr.) will give a velocity of 625 m. (2,050·5 ft.-secs.) with an average pressure of 2,400 kilos. on the square centimetre (15¼ tons per square inch) in the French rifle, Pattern 1886. It slows down slightly for the first two months after manufacture, the charge being increased to 2·95 gm. (52·47 gr.), after which it becomes very stable, and it keeps well if the nitro-cottons are quite pure. The paraffin is added to diminish its sensibility to shock, and to slightly retard the rate of combustion."

NAVAL AND MILITARY NOTES.

NAVAL.

Home.—A telegram from Ferrol of the evening of the 30th March reports that that afternoon the "Howe" was successfully floated. She has been towed up the harbour, and is now anchored in 7 fathoms. She draws a little over 30 feet The pumps have now complete command of the water, but before she is taken into dock she will probably be lightened to 26 feet. The report on the real state of her bottom, and the decision as to whether she is so strained as to be permanently unfit for active service, are awaited with much anxiety, especially as all her class are notorious for the weak construction of their bottoms.

The "Tourmaline," 3rd class cruiser, has returned to England, and will be paid off, re-commissioned by Captain R. Poore, and then return to her former station (North America and West Indies). The 1st class cruiser "Edgar" has left for the Mediterranean, and the 1st class cruiser "Royal Arthur," the new flagship for the Pacific, has also sailed for her destination.

The 1st class cruisers "Blenheim" and "Hawke," and the 2nd class cruisers "Brilliant," "Sappho," and "Pique," have been passed into the A Division of the Fleet Reserve, and are now ready for commissioning.

The 2nd class cruiser "Astræa," one of the improved "Latona" class, and similar to the "Cambrian," a description of which appeared in last month's Notes, was launched at Devonport on the 16th March.

The new 1st class battle-ship "Repulse" has satisfactorily completed her steam trials off Portsmouth. At the natural-draught trials an average speed of 17·7 was maintained for eight hours, while the contract power was exceeded by 533 H. At the four hours' forced-draught trial, the draught of water was 25 ft. 9 in., the steam in boilers 150·4 lbs., vacuum, starboard 28¼, port ditto; revolutions per minute, 104·1 starboard, 103·8 port; mean pressure, high, 47·4 starboard, 47·7 port; intermediate, 29·66 starboard, 27·47 port; low, 12·36 starboard, 11·68 port; indicated H.P. high, 1,579 starboard, 1,603 port; intermediate, 2,175 starboard, 2,009 port; low, 2,016 starboard, 1,902 port; total, 5,788 starboard, 5,514 port; collective I.H.P. 11,302. The mean air pressure employed was 0·91 in., and the speed of the ship during the four hours 18·2 knots. The "Repulse" was rather light, drawing nearly 2 ft. less than she will do with all stores on board; but allowing for this lightness, it is considered that, when fully loaded, she will easily maintain 17 knots at natural draught, and 18 knots under forced. The consumption of coal was taken on the first trial, and was found to amount to only 2 lbs. per indicated H.P.

The reconstructed armour-clad "Hercules" has also, at last, completed her trials. Since she was provided with her new triple-expansion engines, the noise and vibration produced by her single screw, under the new conditions, were such as to render the after part of the ship uninhabitable. Various modifications of the original propeller were tried without success, and it was eventually decided, after experiment, to try the effect of a modified Griffith with an outward bend given to

the blades, and set back 6 in. further to the rear. It consisted of four blades, and had a diameter of 21 ft. 0½ in., and a pitch of 17 ft. 7½ in. The results of the trials were satisfactory. During a three hours' run the engines were driven at various speeds. Sixty revolutions gave 2,187 I.H.P.; 70 revolutions, 3,258; 75 revolutions, 4,036; 80 revolutions, 5,222; 82 revolutions, 5,470; and 90 revolutions, 7,685. A speed of 13·2 knots was obtained with 82 revolutions, and 14·8 knots with 90 revolutions.

The "Vulcan," the new torpedo depôt-ship, which has been so long lying idle at Portsmouth awaiting the settlement of the boiler difficulty, having now had her boiler tubes ferruled, has at last undergone her forced-draught trial. The trial, which lasted four hours, with an air pressure of 1·8 in., was eminently satisfactory, and fully justified the original estimate as to the "Vulcan's" performance. Her mean draught was 23 ft., for which she was designed, and with a mean steam pressure of 148 lbs. and 99·5 revolutions the I.H.P. was 12,032, and the ship realized a speed of 20·2 knots. The original estimate was 20 knots with I.H.P. 12,000.

The 1st class torpedo-gunboat "Circe," built under the Naval Defence Act, at Sheerness, and engined by Messrs. Penn and Son, completed her official trials on the 1st March. The "Circe" is 230 ft. long, 27 ft. beam, and has a displacement of 830 tons at a draught of 8 ft. 9 in. At her natural-draught trial, with steam at 140 lbs. pressure per square inch, vacuum 27 in., and air pressure in stoke holes 0·8 in., the engines attained a mean speed of 2,618 I.H.P., the speed of the vessel being 18·27 knots. The three hours' forced-draught full-speed trial was made in very heavy weather; but the contract power of 3,500 I.H.P. was considerably exceeded, although the engines and boilers were, through the heavy sea that prevailed, very severely tested; but even under these adverse circumstances the trial proved highly satisfactory.

A gunnery reform, which has been warmly advocated for some time, is now to be adopted. This is the introduction, as a service weapon for use in fast light craft, of a quick-firing gun smaller than the 4·7 Q.F. and larger than the 2·24 in. or 6-pr. Q.F. The Chilians, for this intermediate purpose, have selected, we believe, a 14-pr. For our own navy a 12-pr., after a series of trials, has been selected, and will not only be mounted as a ship gun, but will also supersede the old 9-pr. M.L. gun as a field and boat gun. The new gun, with its ship or boat and field mounting, was designed at Elswick, and is fitted with a new form of breech mechanism, which provides for the breech being opened or closed in one motion, and gives great leverage for the first and last portions of the motions. When the gun was tried at Portsmouth on a field mounting, five rounds were fired at a target in rather over one minute, excellent practice being made. At each discharge the carriage recoiled some 5 or 6 ft. When mounted in a boat the gun is placed on a recoil carriage very similar to that in use with the 3- or 6-pr. Q.F. gun. The recoil is allowed to be of extra length so as not to strain the boat. The field 12-pr. and the torpedo-catcher 12-pr. will take the same projectile, so that simplicity in stores is gained, but we believe the cordite charges are different.

The Admiralty have finally adopted the new steel and wire 6-in. Q.F. gun for the naval service. The new weapon has been subjected to a series of exhaustive trials. It is a long gun of about 40 calibres, and its weight is 7 tons. It carries a projectile of 100 lbs. weight a distance of some 7,000 yards. It is so rapid that, fired with cordite at long range, three shots may be in the air at one time. Forty of the new guns have already been manufactured in the gun factories at Woolwich and are being issued to ships. Each weapon contains several miles length of wire, it having been found that a gun made up of this wire is stronger than when manufactured of homogeneous metal, while the long bore enables the whole of the charge to be consumed.

The ten torpedo-boats numbering from 88 to 97 are to be fitted with bow torpedo-tubes.

The torpedo-boat destroyer, mentioned in last month's "Notes," a new class of swift small craft, the introduction of which is due to the late Admiralty, will hold an intermediate position between the 1st class torpedo-boat and the torpedo-gun vessel or "catcher." Our 1st class torpedo boats have a displacement not exceeding 125 tons, and however fast in smooth water, are too small to maintain a high rate of speed in a sea-way. Our smallest "catchers" displace, on the other hand, as much as 525 tons. The new class of destroyers, 20 of which are to be built, will have, according to the statement of the Secretary of the Admiralty, a guaranteed speed of 27 knots. Six are now in course of construction; two, the "Daring" and "Decoy," are being built by Messrs. Thornycroft and Co., of Chiswick. The "Daring" is to be completed and ready for trial by the 27th July, and the "Decoy" by the 27th August. Messrs. Yarrow and Co., of Poplar, are constructing the "Havoc" and the "Hornet," both of which are to be completed by the 4th October. The remaining two, the "Ferret" and "Lynx," are being built by Messrs. Laird, of Birkenhead. Each of the six is 180 ft. long, by 18 ft. 6 in. beam, and, at a draught of 5 ft., will displace 220 tons. The engines, driving twin screws, will together develop a maximum of 3,400 I.H.P., and give the vessel the great speed of 27 knots. The bunker capacity will be for between 55 and 60 tons of coal. The armament, in addition to three torpedo-tubes and five 18-in. torpedoes, will consist of one 12-pr. and three 6-pr. Q.F. guns. The remaining fourteen of these destroyers are to be built by contract, and commenced this year; but it is understood that the orders for their construction will not be given until after the "Daring" has been subjected to an exhaustive series of trials.

The ten 1st class torpedo-boats which were ordered by the late Admiralty, and the completion of which has been accelerated by the new Board, are being constructed—three by Messrs. Thornycroft, three by Messrs. Yarrow, three by Mr. White, of East Cowes, and one by Messrs. Laird. These boats are 140 ft. long, 14 ft. 6 in. beam, and will have a displacement of 110 tons. A single engine will develop 1,600 I.H.P., and give an estimated speed of 24 knots. Thirty tons of coal will be carried. The armament will consist of three torpedo-tubes, with five 18-in. torpedoes and three 3-pr. Q.F. guns. These boats will be at least 1 knot faster than any we have hitherto possessed.

In the last month's "Notes," the results of the trial of a second experimental armour plate, manufactured by Messrs. Vickers and Co., of Sheffield, according to the Harvey system, which took place on board the "Nettle" at Portsmouth on the 19th January, were given. Another 6-in. solid steel plate, manufactured from the same ingot by the same firm, but untreated by the Harvey process, was tested on board the "Nettle" on the 28th of February, the object of the trial being to endeavour to ascertain the exact additional value of the Harvey treatment. The trial of both plates was of a most unusual kind, the guns and projectiles being those regularly employed for testing 10½-in. plates, viz., the 6-in. B.L. gun, with Holtzer forged steel projectiles, weighing 100 lbs. each. The net result of the four rounds fired against the Harveyed plate was, that only one projectile, at No. 3 round, just perforated the plate, lodging in fragments in the backing. The remaining three projectiles were completely broken up without perforating, although No. 2 caused a crack. The result of the firing at the untreated plate was as follows:—Round 1 (Holtzer shell), charge, 30½ lbs.—The shell perforated the plate and lodged in the backing. Round 2 (Palliser shot), charge, 30½ lbs.—The shot was stopped and broken up, point imbedded in plate. Round 3 (Palliser shot), charge, 36½ lbs.—The projectile perforated plate and penetrated backing to a depth of 3 ft. Round 4 (Holtzer shell), charge, 24½ lbs.—Shell perforated plate and penetrated backing to a depth of 2·1 in. and rebounded. Round 5 (Holtzer shell), charge, 27½ lbs.—Shell perforated plate, penetrating backing 3·1 in., and rebounded.

An undertaking, which has extended over between three and four years, and at a total cost of about 40,000*l.*, has now been completed at Portsmouth, namely, the construction of a coaling station. The new coaling station, which has a capacity of storing 50,000 tons of coal in a pile 10 ft. high, has been formed on a point of land on the northern side of the Tidal Basin, having a large water frontage. The plant, which is designed both for receiving and discharging coal, consists of two large pairs of compound surface condensing engines, two accumulators, ten hydraulic 30 cwt. elevated cranes, constructed for trucks to pass under them, two coal hoists, and a number of capstans and accessories. The cranes and hoists are worked by hydraulic power from mains at a pressure of 700 lbs. to the square inch, and are connected with hydrants by means of telescopic tubes, having a range of 10 ft. in any direction. Each crane has a span of 50 ft., turns on a pivot, and can be moved from place to place on lines of rails by a winch and gearing. While the cranes will be exclusively employed in loading and discharging sea-borne coal, the hoists will be used for filling ships rapidly with land-borne coal during periods of stress, when colliers may not find it possible to navigate the sea. In this case the coal wagons will be lifted bodily upon the platform of the hoists, tipped by means of hydraulic cylinders, and their contents, weighing ten tons, discharged down shoots into cruisers and lighters. Each hoist is understood to be able to load with loose coal at the rate of 500 tons an hour. All the machinery has been tested by the dockyard officials, and the tests were of a realistic and successful character.

Only cruisers and comparatively small ironclads will be able to fill up with coals alongside. Battle-ships will have their supplies conveyed to them by lighters, which, for the sake of quick and convenient handling, will receive the coal from the cranes in bags. Similar arrangements are being made at Portland, but they are there still far from completion.

Austria-Hungary.—According to the "Army and Navy Gazette," the summer manœuvres of the Austrian fleet will be divided into two periods, the first devoted to the training of the personnel, and the second to combined operations. Vice-Admiral Baron von Spaun will be in command, flying his flag on board the battle-ship "Kron-prinz Erzherzog Rudolf," with Rear-Admiral Cassini, flying his flag on the "Prinz Eugen," as his second in command. In addition to these vessels the ships mobilized will include the "Kron-prinzessin Erzherzogin Stephanie," the ram cruiser "Kaiser Franz Josef," the broadside battle-ships "Kaiser Max" and "Don Juan d'Austria," the torpedo-cruiser "Leopard," and torpedo-gunboat "Trabant," and the depôt ship "Pelikan," with six 1st class and six 2nd class torpedo-boats.

The rapid development going on in torpedo warfare and submarine mines has determined the Minister of Marine to reorganize the school of instruction of this branch of naval science. The school will be divided into two: the instruction in all which relates to torpedoes will be given on board the school ship "Alpha;" while that relating to submarine mines, &c., will take place at the new schools of mines and submarine telegraphy lately established at Viselle. Each of these schools will have a completely independent Staff. ("La Marine de France.")

Denmark.—The 3rd class cruiser "Geiser," which was launched last summer from the dockyard at Copenhagen, recently concluded her steam trials successfully. She is a sister ship to the "Hekla," launched in 1890, but of an improved type. She is built of steel, with an armoured deck varying from 1 in. to 1·5 in. in thickness, is 256 ft. long, 29 ft. beam, with a mean draught of 10 ft. and a displacement of 1,280 tons. Her armament consists of two 12-cm. (4·7-in.) Q.F. guns, four 8·7-cm. (6-pr.) Q.F. guns, six Hotchkiss mitrailleuses, and four torpedo-tubes (one forward, one stern tube, and one on each broadside). The indicated H.P. is 3,000, with a speed of 17 knots. The "Geiser" is fitted with Messrs. Thornycroft's patent tubulous boilers, and, according to the report of Captain Nielsen, Director of Naval Construction of the Danish Navy, which he forwarded to the inventors, the results were very satisfactory. The machinery consists of two sets of triple-expansion

engines and eight water-tube boilers, arranged in two boiler rooms, with four stoke-holds and two funnels. The cylinders are 19 in., 30 in., 50 in., with 18-in. stroke; the engines are vertical, and drive each a Thornycroft screw propeller, having forged blades of metal. The diameter of the screw is 8·5 ft., and the pitch 7·59 ft. The total tube surface of the boilers is 12,100 sq. ft., and the total grate area 171 sq. ft. Some of the boiler tubes are made of brass and others of steel. Three trials were made: a six hours' coal-consumption test, an eight hours' sea-speed test, and a four hours' full-speed test. In the first trial the col. I.H.P. was 1,744. Coal consumption per hour for each I.H.P. 1·75 lbs., speed 14·34 knots. In the second, the col. I.H.P. was 2,422, with an air pressure of 0·37 in., the speed 16 knots. In the third trial the air pressure was 0·81 in., the I.H.P. 3,157, and speed 17·1 knots. The maximum I.H.P. registered was 3,314, steam being kept at this H.P. with an air pressure of 1 in. When going full speed the ship was often stopped dead, and again brought up to full speed in a few minutes, the boilers being able to stand all sudden changes of temperature. There was no priming, either during the highest forcing or during sudden changes in the working of the engines. Captain Nielsen also refers to the great ease with which steam is raised in these boilers. He says: "The temperature of the boiler water was 13° C. when fires were lighted, and the gauge glasses three-quarters full. Fires were lighted at 8h. 30m., centrifugal pumps and fans were started with 8 lbs. pressure in boilers at 8h. 54m.; steam pressure 40 lbs. per sq. in. at 9h. 4m.; steam pressure 120 lbs. per sq. in. at 9h. 11m. At this time the engines were sufficiently warm to start them, and the ship put to sea at 9h. 13m. Thus the 'Geiser' can be under way in less than three-quarters of an hour after lighting the fires; it could be done in less than half an hour if it were possible to warm the engines sufficiently in this time." He also compares the weight of the ordinary boilers with which the "Hekla," the sister ship, is fitted, with that of those in the "Geiser," showing that over one-third of the weight of the former is saved in the latter. With these advantages in favour of the tubulous boiler it is likely to come into more general use than at present, but we shall learn more after it has been tried in the "Speedy," the new gunboat which Messrs. Thornycroft are building for the Admiralty. ("Marine-Rundschau" and "Army and Navy Gazette.")

France.—The French navy has sustained a loss by the total wreck of the screw despatch-vessel "Labourdonnais" on the 21st February, off Sainte-Marie, Madagascar; she was a small ship of only 820 tons displacement. Unfortunately there appears to have been a considerable loss of life, two officers and twenty-one men being drowned.

Rear-Admiral Dupont has hoisted his flag on board the "Dévastation" as Commander of the 3rd Division of the Active Mediterranean Fleet, in place of Rear-Admiral Buge, deceased.

The active squadron of the Mediterranean Fleet left Toulon on the evening of the 21st March for a two months' cruise along the African coast and in the Levant; it will return at the end of May to prepare for the grand summer manœuvres. During the cruise, the fleet will be exercised in the new tactics, and the cruisers and light vessels in scouting, &c.

The squadron will finally be composed as under:—

1st Division:—
Battle-ships—"Formidable," flagship of Vice-Admiral Vignes, Commander-in-Chief.
"Courbet."
"Redoubtable."
1st class cruiser—"Cécille."
Torpedo-cruiser—"Faucon."
Torpedo-aviso—"Léger."
Torpilleurs-de-haute-mer—"Audacieux" and "Ouragan."

2nd Division :—
Battle-ships—"Hoche," bearing flag of Rear-Admiral Bourgeois.
"Amiral Duperré."
3rd class cruiser—"Lalande."
Torpedo-aviso—"Lévrier."
Torpilleurs-de-haute-mer—"Téméraire" and "Kabyle."

3rd Division :—
Battle-ships—"Dévastation," bearing flag of Rear-Admiral Dupont.
"Marceau."
"Neptune."
2nd class cruiser—"Davout."
3rd „ —"Troude."
Torpedo-cruiser—"Wattignies."
3rd class barbette cruiser—"Cosmao."
Torpilleurs-de-haute-mer—"Coureur" and "Dragon."

The "Dévastation" and "Marceau" will join the main body of the squadron about the 25th, either at Boué or Tunis, and the battle-ship "Magenta," if she concludes her trials in time, will take the vacant place in the 2nd Division; the "Troude" will join in the Levant, where she has already been detached for a cruise.

Rear-Admiral Pallandrouze de Lamornaix hoists his flag on the 1st April on board the cruiser "Naïade," in command of the Atlantic Flying Squadron, which is also to serve the purpose of a training squadron for cadets and young seamen, and to be employed on fishery protection duties. The "Naïade" is full ship-rigged, and the other two ships of the squadron are the cruisers "Nielly" and "Rigault de Genouilly," which are both barque-rigged.

The armoured cruiser "Charner" was launched at Rochefort on the 18th March. She is a sister ship to the "Latouche-Tréville," which was launched at Havre towards the close of last year, and two more of the same class, the "Bruix" and "Chanzy," are still on the stocks. These four vessels are of the same type as the "Dupuy de Lôme," but smaller; the latter vessel is 6,300 tons, and has three screws, but the new class are only 4,750 tons, and will be twin-screwed. Their dimensions are as follows:—Length, 351 ft.; beam, 45 ft. 6 in.; and a mean draught of 18 ft. 6 in. Their engines are to develop 9,370 I.H.P. under forced draught, with an estimated speed of 19 knots; and 7,500 I.H.P. under natural draught, with an estimated speed of 17 knots. They have a complete armoured belt of a maximum thickness of 3·8 in., and an armoured deck 2·5 in. thick, in addition to which a cofferdam filled with cellulose runs right round the ship to a height of 3·3 in. above the water line. The armament will consist of two 19-cm. (7·6-in.) guns in central turrets, protected by 3·2-in. armour, six 14-cm. (5·5-in.) Q.F. guns in broadside casemates of 3·2-in. armour, four Q.F. guns of 65 mm., and four 47-mm. (3-prs.), six machine-guns, and five torpedo-tubes, two forward, one aft, and one on each broadside. There will be two fighting masts, and a search light will be carried in one of the tops on each mast and four others in different parts of the ship. The conning tower will also be protected by armour 3·3 in. thick.

On the same day the torpedo-cruiser "Fleurus," of 1,310 tons and 4,000 I.H.P., was launched at Cherbourg. Her dimensions are as follows:—Length, 230 ft.; beam, 29 ft. 3 in.; draught, forward 10 ft. 7 in., aft 13 ft. 10 in., and her estimated speed 18 knots. Her armament will consist of five 10-cm. (4-in.) Q.F. guns, two 65-mm. Q.F. guns, four machine-guns, and four torpedo-tubes. She will carry 116 tons of coal, with a steaming radius at full speed of 550 miles, and about 2,000 miles at 10-knot speed.

The Lephay compass ("compas à repères lumineux"), which was experimentally fitted on board the battle-ship "Hoche," is henceforward to be supplied to every battle-ship in the French navy. The inventor, M. Lephay, a Lieutenant in the

French navy, contrives, by the adoption of a combination of lenses and mirrors, to throw from the binnacle lamp of his compass a vertical line of light upon the interior side of the compass box, between the card and the glass. This line, although it may be produced on any desired point of the inside of the periphery, is, for the time being, a fixed line, and bears a known relation with the line of the ship's keel. It thus marks the course of the vessel. From another combination of lenses and mirrors above the centre of the card there is thrown upon the interior side of the compass box a second ray of light, which, when the apparatus has been properly adjusted, moves as the card moves. All that the helmsman has to do is to keep the two lines in one. The navigating officer sets the course by so moving the rays that, the ship being on her course, both are in one; and thus it is not even necessary for the helmsman to know what course he is steering. The advantages of the invention are—that it greatly diminishes the strain upon the helmsman; that, owing to the rays of light having a longer radius than the radius of the card, deviations from the true course are doubly evident and proportionately easy to counteract; that the suppression of the visible light from the binnacle lamp is beneficial to the night sight of those on the bridge; and that it does away with all danger of the helmsman misapprehending orders, since his functions are rendered purely mechanical. The French Naval Commission appointed to consider it reported unanimously in favour of its adoption in all large war-ships.

The Director of the Naval Balloon Establishment, Lieutenant Rageot de la Touche, has been conducting some very successful trials in distant signalling at Lagoubran, near Toulon. He established communications with a torpedo-boat at a distance of 10 miles from the coast, the balloon for this purpose ascending to a height of 400 m. (433 yds.).

Germany.—A new nickel-steel, the secret of the manufacture of which has been secured by Herr Krupp, of Essen, has been experimented with at Meppen. Two 3·4-in. shells, each containing 6 oz. of picric acid, were placed, one in a gun of ordinary Krupp steel and the other in a gun of the new nickel-steel, at a distance of 12 in. from the muzzle. Upon the shells being exploded the muzzle of the gun of ordinary steel was blown into a number of pieces, but the only effect produced upon the nickel-steel gun was a local enlargement of the bore to the extent of a quarter of an inch. In the next experiment a 3·7-in. shell, containing 6·3 oz. of picric acid, was burst in a nickel-steel gun at a point 19·5 in. from the bottom of the bore. The results were an enlargement to the extent of one-third of an inch and a fissure 3 in. in length. Trials of plates of this nickel-steel have also been made, and have given satisfaction. ("Times.")

The eight torpedo-boats building by the Schickau firm are to be improvements on the eight condemned ones, viz., "Flink," "Jäger," "Kühn," "Scharf," "Schütze," "Sicher," "Tapfer," and "Vorwärts," which they are to replace. They will have the following dimensions:—Length, 140 ft.; beam, 18 ft.; displacement, 180 tons; with engines of 1,800 I.H.P., giving them a speed of at least 22 knots. The coal supply is 32 tons, and they will be armed with a submerged bow torpedo-tube, two above-water tubes, and two Hotchkiss Q.F. guns. Each boat will cost about 500,000 francs. ("Riv. Marittima.")

Holland.—With regard to the proposed plan of construction brought forward by the Minister of Marine, mentioned in last month's "Notes," some further details may prove interesting. The Budget Committee has not approved of all his programme, and it seems unlikely that his complete scheme will be sanctioned. The cost of each of the six cruisers of the "A" type will be 2,800,000 fl.; of the six of the "B" type, 425,000 fl.; of the six of the "C" type, 70,000 fl.; of the "D" type, 250,000 fl.; of the large torpedo-boats, 125,000 fl.; and the smaller ones, 90,000 fl.; the total sum proposed to be expended being 23,755,000 fl.; but the initial demand is for three vessels only of the "A" type.

These "A" vessels are cruisers of 3,400 tons, 318 ft. 9 in. in length, and 47 ft.

beam, with a speed of 16 knots, armed with two 9·8-in. guns in a barbette turret forward, and a similar gun at the stern, two 5·9-in. guns firing both fore and aft, as well as ten small Q.F. guns and three torpedo-tubes; the vessels are protected by an armour belt with a maximum thickness of 5·9 in., and an armoured deck. The "B" type are despatch vessels of 450 tons displacement, and an estimated speed of 22 knots, armed with two 3·9-in. Q.F. guns and four 1·96-in., as well as a single torpedo-tube. The six "C" gunboats are intended for the defence of the Hollandsch Diep, and are only intended to have a displacement of 100 tons, with an armament of six small-calibre Q.F. guns; while the vessels of the "D" type, designed for the Zuyder-zee, will be of 200 tons, will have a similar armament, but with the addition of a torpedo-tube. The four cruisers for the colonial service will be of the "A" type, and with a scouter of the "B" type and the five large torpedo-boats, also for service in the East, will be provided at a total cost of 12,575,000 fl. The armoured cruiser "Konigin Wilhelmina," which was launched in the latter part of last year, is 328 ft. long, with 46 ft. beam, a displacement of 4,600 tons, and engines of 5,900 I.H.P., with an estimated speed of 16·5 knots. Her armament will consist of one 28-cm. (11·5-in.) Krupp gun in a turret forward, protected by 9-in. steel armour; a 21-cm. (8-in.) Krupp gun, mounted aft and protected by a steel shield; two 17-cm. (6·5-in.) Krupp guns, mounted in sponsons, one on each broadside; two 6-pr. Q.F. and eight 3-pr. Q.F. guns, six mitrailleuses, and three torpedo-tubes; she has also a protective steel deck of 3 in. maximum thickness, and is further protected against sinking by cofferdams filled with cellulose, which run both sides nearly the whole length of the ship. She has armoured ammunition tubes and a conning tower protected with 9-in. armour.

Russia.—The Naval Estimates for 1893 show an increase of 2,010,000 roubles over those of last year, and the surplus is almost entirely devoted to the construction of new ships; the whole sum set aside for shipbuilding amounts to 20,673,917 roubles against 19,145,509 roubles for 1892. (The value of the rouble now is about 2*s*.) ("Le Yacht.")

The Admiralty have ordered from Messrs. Humphrys and Co. the engines for the new armour-clads "Admiral Senjavine" and the "Petropavlosk." They will be of the same type, but somewhat more powerful than those recently constructed in England for the armour-clad "Georgij Pobjedonosec," as they will develop 12,500 I.H.P. ("Le Yacht.")

There have recently been formed two torpedo companies for river service, which will be stationed respectively on the Vistula and the Neva, but they will be moved along those rivers wherever their services may be required. In time of peace these companies will be under the orders of the military authorities of the place where they are stationed, but in time of war they may be placed at the disposal of the commanders of the naval forces. They will be recruited from among the coast and riverain populations. Their duty consists of making themselves intimately acquainted with the peculiar conditions of the rivers and their estuaries, such as the depth, currents, and peculiarities of the banks. On the outbreak of hostilities they will lay down mines to bar the river against an enemy and also afford assistance in the passage of troops from one bank to the other. The instruction of the men will be carried on in peace-time in accordance with a special programme laid down by the Chief of the Engineering Staff of the Army, especially as regards their electrical duties, and the officers will also have to continually requalify themselves by passing through the officers' course in electricity. Officers and men are attached to the Corps of Engineers. ("Riv. Marittima.")

The manœuvres of the Black Sea squadron are to take place in the spring. The evolutionary squadron will consist of the battle-ships "Ekaterina II," "Cesma," "Sinope," and "Dwjenadzat Apostolow," the 1st class cruiser "Pamjat Merkurijá," the torpedo cruisers "Kapitan Sacken" and "Kazarskij," the torpedo-depôt ship "Bug," and 15 torpedo-boats.

The personnel of the squadron will consist of 3 Admirals, and 6,039 officers and men. ("La Marine de France.")

The evolutionary squadron in the Baltic this summer will consist of the battleships "Imperator Alexander II" and "Imperator Nikolaj I," the 1st class armoured cruiser "Gerzog Edinburskij, the 2nd class cruisers "Plastun" and "Strjelok," the coast defence armourclads "Admiral Greigh" and "Admiral Spiridov," the armoured gunboats "Grozjasčiji" and "Grennjasčiji," the 3rd class torpedo-cruisers "Lieutenant Iljin" and "Posadnik," six 1st class torpedo-boats, and the harbour ship "Rabotnik."

With reference to the armour-plate trials carried out at the Artillery Polygon of Ochta, on the outskirts of St. Petersburg, to which a promise of future reference was made in the February Notes, the following details (mainly from "Iron") may be of interest. Specimen plates were entered for the competition by Messrs. Cammell and Ellis-Tresidder, of Sheffield, by St. Chamond for France, and by the Vickers-Harvey Company respectively. The trials were made in the presence of the Grand Duke Alexis, Grand Admiral of the Russian Navy, Admiral de Livron, a number of other authorities, and several of the foreign naval and military Attachés. A 6-in. gun and Holtzer steel projectiles (made at the Russian factory, and weighing 90 lbs. each), with an average striking velocity of 2,173 ft. per second and a striking energy of about 2,498 ft. tons, were used. The plates were 10 in. thick, that being the usual thickness of plates tested in Russia, and 8 ft. square. They were secured by eight bolts to a pine-wood backing, with boiler plates and iron supports or struts behind. The St. Chamond plate was generally considered the best, inasmuch as it went through the ordeal without cracking, and resisted six projectiles with from 11-in. to 12-in. penetration. One of the Cammell Company's plates was nearly as good, the penetration being a little deeper, and the first and only crack being caused by the sixth shot. The other Cammell plate was too hard and brittle, and was put *hors de combat* at the third shot. Brown's plate (Ellis-Tresidder) completely shattered five projectiles with a very small amount of penetration, but in so doing was itself broken into many pieces, although the backing remained perfectly intact. The fractures exhibited numerous internal flaws, due to some unexplained accident of manufacture, and the plate on that account was not considered to be a fairly representative one. When the Harvey-Vickers plate was fired at, the first shell penetrated to an estimated depth of 4 to 5 in., but as the point was broken off and fused into the plate, it was found difficult to measure exactly. The rest of the shell was broken up into fragments. The second, third, and fourth shots produced similar results to that of No. 1, without any cracks in the plate. It was then agreed by the President and members of the Technical Committee that it was unnecessary to fire any more shots at the plate, although the other English and French plates previously tried received six shots each from the 6-in. gun. Seeing, however, that all the four shots produced like results without any cracks or fissures in the plate, it was decided to declare the competitive trial finished after the fourth shot.

An experiment was then made of firing at the plate with the 9-in. gun of 35 calibres with steel projectiles weighing 406 lbs., at a striking velocity of 1,655 ft. per second and a striking energy of 7,598 ft.-tons. This was an unusually large shot to fire at a 10-in. plate. It penetrated and broke up, cracking the plate seriously in several places, fissures radiating from the holes made by the other shells, but no part of the plate fell off the backing, and, while no bolt was broken, only the bolt in the left-hand corner was bent. A second shell, fired by the same big gun, at the full velocity of 1,889 ft. per second, was broken to pieces and the whole target of plate and backing fell together to the ground, face downwards, towards the gun; the plate, however, was not detached from the backing, only a corner was detached, while only one bolt was broken. Owing to the existence of this fracture it was possible to see the exact position of the head of No. 4 round which was lodged in the plate, and it became apparent that the penetration was less than would be supposed. The 9-in. shell with its point broken just pierced the wrought

iron of the backing and the wood was set on fire. It is considered that, had it been a ship, the inside of the vessel would have been quite uninjured. This plate, which has so successfully withstood a very severe test, was of the same kind as the one tried on the "Nettle" by Messrs. Vickers and Co., only slightly harder. A similar plate only 12 in. thick is to be tested in Germany.

Sweden.—The armoured double-turret ram "Thule," which was laid down at Finboda, Sweden, in the autumn of 1891, and was launched in December, 1892, represents a type of vessel now much in favour with naval Powers of the second and third ranks. With a very moderate displacement and shallow draught, she has good speed, a heavy armament, and exceedingly good protection. She has a displacement of 3,150 tons; her length is 260 ft. 9 in.; her beam 48 ft.; her draught of water 16 ft. 2 in.; her I.H.P. 3,150; her coal capacity 250 tons; and her estimated speed 16 knots. She is a twin-screw, single-masted, two-funnelled vessel, with an over-all protective deck of 2 in. of steel, and two turrets, one forward and one aft. The water-line belt, which is a complete one, is of steel armour, varying in thickness from 7·8 in. to 11·5 in. Armour of the same nature and thickness covers the two turrets, each of which will contain a single 10-in. Elswick B.L. gun. Elsewhere will be mounted four 6-in., five Q.F., and six machine guns, and there will be three torpedo-tubes. ("Times.")

Turkey.—The Sultan is paying great attention to his navy, and now has under construction in Turkey an armoured cruiser and six gun-vessels. Eighteen more gun-vessels are presently to be laid down, and two out of a number of new torpedo-boats have lately been delivered by the builders, the Germania Company, of Kiel. The names of the new vessels are:—The armoured cruiser, "Abdul Kader;" the six gun-vessels, "Keshaf" ("Explorer"), "Saïki-Shadi" ("Joyous"), "Seyah" ("Traveller"), "Nasri-Hudra" ("Divine Power"), "Barikei-Zafer" ("Lightning of Victory"), and "Pelenki-Deryah" ("Sea Tiger"); and the torpedo-boats, "Sehaf" ("Arrow") and "Perviz" ("Triumphant"). ("Marine-Rundschau.")

United States.—In the introductory debate on the Naval Estimates in the House of Commons, reference was made by the Secretary of the Admiralty to the fact that some foreign nations were building cruisers more powerfully armed, better protected, of greater speed, and with a larger coal-carrying capacity than any cruiser built, or at present building, for the English navy, and that, consequently, the Admiralty were about to build two cruisers, which, in their turn, would be superior to any foreign ones at present designed, &c. Some further particulars, therefore, beyond those given in last month's Notes, of the "Brooklyn," one of the foreign cruisers referred to, now building for the United States navy, will be of interest. Her leading dimensions are as follows:—Length on load water-line, 400 ft. 6 in.; beam over all, 65 ft.; mean draught, 24 ft.; displacement, 9,150 tons in service, and 8,150 tons for trial. She will have engines aggregating 16,000 I.H.P., guaranteed to give her a speed of 20 knots, and will have a total bunker capacity of 1,650 tons of coal, with 900 tons at normal displacement. Following the example of the Cape Line steamship "Scot," it has been decided to obtain draught for the furnaces by the use of very high funnels, the height from grate bars to top being about 100 feet. The hull will be of steel, not sheathed, with double bottoms and watertight bulkheads, to 12 ft. above the water line. There will be a heavy protective deck, extending from stem to stern, the edges amidships being 5 ft. 6 in. below the 24-ft. water line, and rising to the level of the water line at the middle of the vessel. Over the machinery and boilers, magazines, &c., this deck will be 6 in. thick on the slopes, and 3 in. thick on the horizontal portion. Forward and aft of the engine and boiler rooms, the deck will taper to not less than 2½ in. Protection at the water-line will be afforded by an armour belt, 3 in. thick, extending the length of the engine and boiler rooms, and from 4 ft. above to 4 ft. below the water-line. Within this armour belt and the skin plating will be a belt of cellulose 3 ft. 6 in. thick, the whole length of the vessel, and reaching from the armoured deck to the berth deck. Between the armoured deck and the berth deck will be thirty-six watertight compartments amidships, to serve as coal bunkers, and

forward and aft of these bunkers will be similar compartments for stores. The conning tower will have 7½ in. armour, with a connecting tube to the protective deck fitted with 5 in. of armour to protect the speaking tubes, signal wires, &c. The "Brooklyn" will have twin screws, each driven by a pair of vertical inverted triple-expansion engines, enclosed in separate compartments, and with shafts so arranged that the forward engines can be uncoupled, and the after engines alone used for cruising and low speed. There will be five double-ended and two single-ended boilers, arranged in three stokeholds, separated by independent and watertight bulkheads. The ship will have a steaming radius of 1,792 knots at full speed, or 6,216 knots at a speed of 10 knots. The machinery has been designed under the direction of Commodore Melville, Engineer-in-Chief of the Navy.

The battery will consist of eight 8-in. B.L. guns of 35 calibres, twelve 5-in. Q.F. guns, twelve 6-pr. Q.F. guns, four 1-pr. Q.F. guns, four machine guns, and two field guns. The 8-in. guns will be mounted in four barbette turrets, one forward and one aft, on the centre line, and one on each side amidships. Those in the turrets on the centre line will have an angle of training of 310°, while those in the side turrets will have an angle of training of 180°, from right ahead to right astern. The centres of the side turrets will be 23 ft. from the centre line of the hull. The armour forming the barbettes, which will protect the carriages, platforms, and turret machinery, will be 8 in. thick for a portion equivalent to the training of the guns, and 4 in. thick for all remaining portions. Under the turrets will be 3-in. armour supporting tubes, which will also protect the ammunition hoists. The turret armour will be 5½ in. thick, and the guns are to be so placed that they can be supplied with ammunition and loaded in any position of training. The 5-in. guns will be protected by fixed segmental shields, 4 in. thick, and by 1½-in. splinter bulkheads, to protect the crews from explosive shells, and extra side plating.

There will be five torpedo-tubes, one bow and two on each broadside, and she will be protected by torpedo nets. There will be two military masts with fighting tops. The arrangement of decks above water has been made to provide high freeboard and ample berthing accommodation. The electric lighting plant will be in two divisions, each consisting of an engine and a dynamo of 400 ampères and 80 volts. The water-tanks will contain a supply for fifteen days, and distilling apparatus and evaporators will be provided. The complement will be 566, including officers and men. ("Engineer.")

The "New York" and "Paris" (of the Inman Line, lately transferred to the American flag) are to be fitted as auxiliary cruisers for the United States navy. Their armament will consist of twelve 6-in. B.L. guns and twenty 6-pr. Q.F. guns, two submerged torpedo-guns, discharging torpedoes charged with high explosives, and two torpedo-tubes on turntables.

In last month's "Notes," in the brief details which were given of the battle-ships "Indiana," "Massachusetts," "Oregon," and the latest battle-ship No. 4, now to be called the "Iowa," the armament of the latter was inadvertently given as four 13-in. B.L., eight 8-in. B.L., and four 6-in. B.L. guns; while the armament of the the three former was given as four 12-in. B.L. and six 4-in. Q.F. guns irrespective of small quick-firers. It should have been the other way; the armament of the "Iowa" will consist of four 12-in. B.L. guns instead of the heavier 13-in. guns of the three earlier-designed vessels; it further appears that all have armoured ammunition tubes. A full description of these vessels will be given as opportunity occurs.

An experiment was recently carried out with a view to determine the possibility of destroying a torpedo-boat when lit up by the beam of an electric search light. A special target was used, and it was fired on by the gunboat "Yorktown" with an 1·4-in. Q.F. gun, a Gatling, and ninety riflemen, and in the space of two minutes 904 rifle shots, 788 Gatling, and 20 Q.F. shots were discharged, with the result that the target was struck by only 101 rifle and Gatling bullets and by 1 projectile from the Q.F. gun. If these are the results of an experiment under peace conditions, it

is easy to imagine what the effects of similar fire would be in actual war during the excitement which would be caused by a judicious and unexpected attack on the crew of a ship wearied by long hours of anxiety and watchfulness. ("Riv. Marittima.")

MILITARY.

Austria-Hungary.—According to the "Militär-Zeitung," experiments are being conducted by the military authorities, with the object of finding out how far it is possible to combine "Aleuronat" with biscuits and compressed bread for use in the field. This material contains 80 per cent. of vegetable albumen, and biscuits containing it are said to have a nutritive power far beyond anything yet tried. If the experiments succeed, the result will be a considerable reduction in the price of the biscuits. Aleuronat is prepared from wheat-flour.

The whole of the cavalry have recently been provided with a woollen glove, furnished with a covering of leather or strong ticking on the palm and between the fingers.

In future two men of each infantry and jäger company, and a corporal in each battalion, will be instructed in medical aid and nursing duties. The privates will be selected from men who have finished their first year's service; the corporals from those who have completed their second year.

Belgium.—The Mauser rifle (M/89) is already in the hands of the 2nd field division, and, according to the "Belgique Militaire," will in a few days be delivered to the 1st division, so that half the army will then have been provided with the new arm. The Belgian manufacturers are fully prepared with the necessary plant to continue the supply, and it is said that the want of durability of certain parts of the mechanism of these excellent rifles has been entirely obviated.

Bulgaria.—From the beginning of the year each of the six infantry divisions has been provided with a cyclist detachment, consisting of one non-commissioned officer and eight men, who have been through a course of training in the pioneer battalions.

With the object of doing away with the special rough riders hitherto employed for breaking in the young horses of cavalry and artillery, a cavalry school has been established at Sofia, at which the officers of those arms will be taught to train horses as well as to teach their own men to ride.

France.—The number of remounts to be received by each cavalry regiment in 1893 is 78 for regiments belonging to army corps, 86 for those belonging to independent cavalry divisions, each regiment further being supplied with 8 horses for officers. The regiments of Chasseurs d'Afrique receive 83 remounts, and 8 for officers. The Spahi regiments receive 8 or 9 officers' horses only (except the 4th, which also receives 89 troop horses). Regiments in France will be exclusively provided with French horses; those in Africa with remounts of Arab origin. In future, remounts under 5 years will be sent to the depôts, and not (as hitherto) brought on the establishment of regiments. ("Mil.-Woch.")

The field bandage is in future to be carried by dismounted troops (except Alpine and African corps) in a pocket to be made in the lining of the cloak over the left breast, and other positions for the pocket are laid down for the cavalry and other troops. No other article of any kind is to be placed in the pockets assigned for the

bandage. The bandages for service in the field will be issued on the order for mobilization, and the pockets will then be sewn up. In future, too, the bandages are to be kept in company stores, and not taken care of regimentally. Such field bandages are intended solely for use on active service, other appliances being kept up for use in time of peace.

According to "L'Avenir Militaire," General Saussier, the Military Governor of Paris, has submitted to a committee the proposal of the Duc de Morny to employ photography as a means of establishing the identity of all persons in military employment, and the committee has reported favourably on the system proposed. The men of an entire regiment can be photographed separately in a few hours. Two pictures of each man cost about 5 centimes.

"Le Progrès Militaire" recently published an article calling attention to the great inconvenience and dissatisfaction caused to the commanders of cavalry and artillery regiments by their having to provide horses for the mounted officers of the infantry and auxiliary services. The mounted officers constantly complain that they get horses which are unsuitable; while, on the other hand, the regimental colonels naturally grumble at having to give up horses that are capable of good service in their batteries or squadrons, and endeavour to palm off animals on the mounted officers which are not suitable for their work. It is stated in the article referred to that the average number of horses thus provided for mounted officers of the infantry and different services (exclusive, of course, of cavalry and artillery) is about 340 per army corps, and that the horses are changed every four years. The writer of the article suggests that the dissatisfaction alluded to above could be obviated, and an ample supply of saddle horses ensured, by the establishment of a remount depôt of, at the outside, 100 horses per army corps, which it is proposed to attach to the train squadron of the corps.

In view of the interest in fencing excited by Captain Hutton's recent lecture on swordsmanship, it may be well to draw attention to the "Procès-verbaux de la séance du comité de la Société d'Encouragement de l'Escrime (à Paris) du 12 Janvier, 1891," in which a report on the subject of an alteration of the sword was read and approved.

The experiments made in the autumn of last year regarding the employment of cavalry in the Alps were not successful. The horses imported from Sardinia and Corsica did not take to the work as kindly as was hoped would be the case, and most of them on reaching a considerable height lost their heads and became unmanageable. No men were lost during the trials, owing to their having received orders to dismount as soon as their horses showed any signs of fright, but several horses fell into the ravines, &c., during their paroxysms of terror, and were killed. Even supposing that the horses could be accustomed to travelling along the difficult mountain paths, it is difficult (according to the paper quoted) to imagine to what use cavalry can be put in the Alps. The Italians are carrying out similar trials, but serious accidents have already occurred, and it is not probable that the mountain artillery can be replaced by field artillery. ("L'Avenir Militaire.")

The following extract from "La France Militaire" is given in continuation of the remarks made in "Military Notes" for March, regarding the instruction of recruits of the artillery and train in reading and writing. In accordance with an order of the War Minister, instruction in those subjects is in future to be given to illiterate recruits in all branches of the Service. Such instruction will either be given by persons serving as soldiers, who are exempted from the full period of three years' service on account of their scientific attainments, or in ordinary civil schools, where the men will be taught in evening classes.

According to "La France Militaire," the "Société Française de Secours aux Blessés Militaires," of which Marshal MacMahon is the President, has at its disposal 22 mobile field hospitals and 740 standing hospitals, capable of accommodating 60,000 sick, as well as 68 railway station establishments. The society, which consists of 395 groups or sections, spread over the whole of France, numbers 50,000 members. At the end of 1892 its capital was 5,800,000 fr., and its stock in hand was valued at 1,000,000 fr. During the year the amount of subscriptions was 325,000 fr., and the society received 70,000 fr. in the form of donations and legacies.

Germany.—The "Revue du Cercle Militaire" gives the following particulars regarding the ages of the German Generals. Of the 16 Prussian army corps commanders, as distinguished from the Bavarian, Saxon, and Württemberg corps, 8 are between 60 and 70 years of age, and 8 between 50 and 60. Thus 1 is 68, 1 is 67, and 1 is 65, 3 were born in 1829, 2 in 1832, 3 in 1833, 1 in 1834, 1 in 1835, and 3 in 1836. Of the division commanders only 1 is over 60 (64), 1 was born in 1833, 3 in 1834, 6 in 1835, 7 in 1836, 4 in 1837, 4 in 1838, 4 in 1839, 2 in 1840, 1 in 1841, 1 in 1844, and 1 in 1851. Among the brigade commanders the oldest was born in 1834, 5 were born in 1838, 8 in 1836, 10 in 1837, 15 in 1838, 19 in 1839, 17 in 1840, 10 in 1841, 7 in 1842, 2 in 1843, 2 in 1844, and 1 in 1857. Of the governors and commandants of fortresses, 3 were born in 1831, 2 in 1832, 6 in 1833, 2 in 1834, 5 in 1835, 2 in 1836, 3 in 1837, 2 in 1838, 2 in 1839, and 2 in 1840. Of the generals who do not hold high commands of troops, 2 were born in 1829, 2 in 1831, 4 in 1832, 6 in 1833, 1 in 1834, 6 in 1835, 4 in 1836, 2 in 1838, 7 in 1839, 1 in 1840, 4 in 1841, and 4 in 1842. Thus the mean ages on 1st January, 1893, were practically for corps commanders 60 years, division commanders 55 years, brigade commanders 52½ years, governors 57 years, and other generals 56¾ years.

It is expected that the weight carried by the German infantry soldier will shortly be considerably reduced, owing to the extensive employment of aluminium. At present it is 31 kilos. 253 gm. (= 68·59 lbs.), inclusive of the spade, tent, certain articles in copper, &c. If the projected alterations are carried out, the weight on half the men will be reduced to 25 kilos. 431 gm. (= 55·55 lbs.), and that on the other half (those who carry the spade) to 26 kilos. 281 gm. (=57·6 lbs.). ("Revue du Cercle Mil.")

Of the total number of 77,000,000 cub. m. to be removed in the construction of the canal from the North Sea to the Baltic, 40,000,000 have now been excavated. Nearly the whole of the remainder will be dredged. ("Rev. du Cerc. Mil.")

The "Mil.-Wochenblatt," No. 22, speaks in very favourable terms of a new apparatus for instructing men in the theory of shooting, invented by Feldwebel Hasselkuss, and to be obtained from Karl Kühler, in Wesel. The price (in Germany) is 10 mks. 25 pf. From the description, it would appear that the apparatus is well adapted for ensuring that the most unintelligent recruit shall acquire a clear insight into the theoretical principles of musketry, including the intricacies of cones of dispersion, limits of fire, &c.

The "Mil.-Wochenblatt," No. 24, has a short essay, the object of which is to demonstrate that the armament of the field artilleryman with a short carbine and side-arm would considerably add to the efficiency of his branch of the Service, and would materially benefit the whole army. The writer proposes that the weapon to be adopted should be shorter than the cavalry carbine, a range of 350 m. being ample for all purposes.

Italy.—"L'Italia Militare," No. 6, gives a description of the arrangement of the fourteen fortresses and six groups of forts which form the Italian system of defences. A short extract from the Italian is given in "Mil.-Wochenblatt," No. 18.

The organization of the troops in Massowah, according to the "Esercito," is as follows:—The troops form an integral part of the Italian army. Provision is made for the Commander-in-Chief of the troops and two zone commanders (Asmara and Keren), commanders of artillery and engineers, heads of sanitary, commissariat, and legal departments. The troops consist of 1 company of carabinieri (partly natives); 1 rifle battalion of 6 companies; 4 infantry battalions of 4 companies (natives); 2 squadrons (natives); 2 mountain batteries of 4 guns (natives); 1 gunner company (partly natives); a sanitary, provision, and arsenal section; a sapper company (partly natives); a railway and telegraph company (partly natives); a train company (partly natives); Arabic and other interpreters; and a central depôt for the troops in Naples. The Italian officers continue to be borne on the army list; the native officers are selected from the non-commissioned officers. The Italian officers are to serve with the African troops not less than eighteen months; those serving with the infantry, cavalry, mountain-batteries, and carabinieri, for four years. The Italian rank-and-file are mostly volunteers from the Italian army, and engage for one year's service in Africa. Those who are to serve with native troops engage for two years (three years in the carabinieri).

According to "L'Italia Militare," two Alpine regiments are being supplied with the new rifle (6·5 mm.), and will carry out experiments which will last over two months. By the end of 1893 all the Alpine regiments will have received the new weapon, and reserves will have been provided for all the Alpine Mobile Militia and Territorial Militia (about 48,000 arms). From the beginning of 1894, 100,000 of the rifles are to be turned out annually.

The total number of remounts bought for the cavalry, artillery, and engineers, in 1892, was 3,375, of which 3,261 were foals. The latter were distributed among the six remount depôts. The number of horses for the above arms purchased by the Government during the past seven years is as follows:—

1886.....	1,633 mature horses.	3,199 foals.
1887.....	2,873 ,,	4,136 ,,
1888.....	2,407 ,,	4,095 ,,
1889.....	383 ,,	3,877 ,,
1890.....	415 ,,	3,428 ,,
1891.....	221 ,,	3,358 ,,
1892.....	114 ,,	3,261 ,,

At the end of 1892 there were altogether 6,674 foals in hand in the several remount depôts.

Netherlands.—With reference to the statement in "Military Notes" for February regarding the modification of the Mannlicher rifle, of 6·5 mm., proposed for the Netherlands army, a description of the weapon will be found in the "Militär-Wochenblatt," No. 21, and the "Revue du Cercle Militaire," No. 8. It should be noted by officers who may read the German description that certain dimensions are there incorrectly stated, and a list of errata will be found at the end of "M.-W.," No. 24.

Roumania.—The pioneer equipment of the infantry is described in a note in the "Revue du Cercle Militaire," No. 12.

The War Minister has concluded a contract with the Steyr manufactory, according to which 110,000 Mannlicher rifles (M/93) are to be delivered by the end of 1893. All the improvements suggested by the trials conducted during 1892 are to be adopted. 8,000 of these weapons, as stated in the March number, are already in the hands of the troops.

Russia.—According to the "Revue du Cercle Militaire" the corps of frontier-guards, hitherto under the Minister of Finance, now form part of the permanent

army. This new branch of the service is under the command of an Inspector, Lieut.-General Svinine, and consists of no less than 26 "brigades" of an average strength of 1,000 men and 400 horses. The mounted detachments, which were two years ago formed as squadrons (sotnias), will, it is expected, be transformed by degrees into squadrons of 150 horses.

Whether it is intended or not that these new formations, which represent 12 regiments or 3 divisions, shall be combined to form those higher units, Russia will now have at her disposal (as pointed out in the "Mil.-Wochenblatt") an additional 72 squadrons, which will be practically the same in personnel, matériel, and training as the rest of the cavalry, and which for purposes of invading an enemy's territory would be especially useful during the first operations of war, on account of their exceptional knowledge of country. Russia has already 17 regular and 2 Cossack divisions of cavalry, so that this new development practically gives her the disposal of 22 cavalry divisions in first line (from which certain deductions would be made for the so-called divisional cavalry), while the second and third categories of Cossacks would supply the reserve formations or be available for other enterprises.

The "Invalide Russe" publishes yearly reports on the obligatory 2-verst obstacle races for officers of the cavalry, Cossacks, and horse artillery, which shed much light on the zeal of the officers for sporting exercises, and also on the establishment of officers' horses. These races, for which prizes are given by the War Office, can only be run on horses which are the personal property of the riders. In 1892, 2,280 out of 2,610 officers took part in these competitions. The 330 (12·6 per cent.) who did not take part are thus accounted for:—

Not in possession of own horse.....	63
Rider sick	107
Horse sick.....	92
Horse untrained.....	68
	330

In some regiments the number of officers who did not compete amounted to 54 per cent., and in one division to 41 per cent. Notwithstanding the strict order issued by the War Minister in 1891, that commanders should enforce the regulation regarding officers being in possession of effective horses and taking part in the competitions, the number of those who did not compete has risen from 11 to 12·6 per cent. The "Mil.-Wochenblatt" draws attention to the fact that the races are held in summer, when the mounted officers cannot do their duty properly with a troop horse only, and absolutely require a private horse. (The Guard Officers have only private horses.) Good horses are still very dear in Russia, and to this must be added that the Russian officers do not take particular delight in riding.

More recently, however, sporting clubs have begun to be formed in several regiments and divisions.

It is stated that the Russian Government has ordered 8,000 of the range-finders invented by Captain Souchier, Instructor at the Musketry School at Châlons. A description of the instrument, which is in the form of a small glass prism, is given in the "Militär-Wochenblatt," No. 17.

In the "Neue Militärische Blätter" for March will be found an account of some very instructive exercises carried out last year, in which rivers were crossed by means of improvised boats or pontoons. The most valuable deduction from the experiments was that ordinary canvas, if soaked long enough in water, becomes practically waterproof, and so can be utilized for converting wagon bodies, &c., into practicable pontoons.

The same periodical, quoting from the "Revue d'Art." and the Russian "Engineer Journal," gives the results of experiments made last winter with snow intrenchments and breastworks as protection against artillery and rifle fire.

The following notes on the progress of the Trans-Siberian Railway are taken from the "Deutsche Heeres-Zeitung," No. 18.

Within a few years' time the capital of Russia, and consequently the whole of Central Europe, will be united to the furthest parts of Asia by means of the Trans-Caucasian and Trans-Siberian Railway. In order to construct the latter, Russia will expend 38½ million roubles in 1893, of which 30 millions are destined for the line between Tscheliabinsk and Irkutsk and 8½ millions for rolling stock. The expense of building the Trans-Siberian Railway, the "Russian Pacific Railroad," as the Americans call it, will be defrayed by the State, and the work will be carried out by the Government.

The undertaking may be divided into three parts:—First of all, the construction of the line Tscheliabinsk—Irkutsk (3,082 versts) will be put in hand after the completion of the line Vladivostock—Grafskaia, connecting the Ural mineral line with the Trans-Siberian Railway at Jekaterinburg; next, the line Grafskaia-Kharbavka (347 versts), and that connecting Stretensk with Myssoskaia (1,009 versts), the terminus of the "Trans-Baikal Railway, will be laid; lastly, the line to the Baikal (292 versts) and the line Stretensk—Kharbavka will be built.

The construction of the first group is already begun, so that the line from Tscheliabinsk to Irkutsk will be completed at the latest in 1900; the junction line at Jekaterinburg ought to be finished before the end of 1894, and the Vladivostock—Grafskaia line in 1895. Under favourable circumstances it is hoped that it will be possible to take in hand the construction of the second group during the same time, and that the line Grafskaia—Kharbavka will be ready between 1895 and 1898, and the Trans-Baikal line in 1902 at the latest. Thus in 1902 an uninterrupted succession of railways and steamers will join up Siberia from one end to the other, viz., railway from Tscheliabinsk to Irkutsk, steamers across the Baikal, railway from Baikal to Stretensk, steamers on the Amur from Stretensk to Kharbavka, and finally, railway from Kharbavka to Vladivostock. This line has the enormous advantage for Russia that it passes entirely through Russian territory for a distance of 10,000 versts, whereas, were Siberia to remain isolated from European Russia, its rich natural resources would continue to remain almost unexploited.

Spain.—The velocipede service in the Spanish army has been definitely organized by a ministerial circular of the 23rd February. The velocipede section of the railway battalion will be charged with the special duty of assuring the service of communication during manœuvres and in the field, and will be attached to army headquarters. This section will also undertake experiments from time to time with the various models of machines which may be proposed for adoption. For the present, the German bicyclette Fram Keuburger will be considered the regulation pattern. In each regiment of infantry and battalion of chasseurs there will be a velocipede section, in charge of an officer who will act as instructor. A section, relieved weekly, will be placed at the disposal of the staff to convey messages to the garrisons of the district which are now sent by telegraph or telephone. During manœuvres the cyclists will be attached to division and brigade staffs to carry despatches, perform the postal service, assist in reconnaissances, &c. As a rule only sergeants and corporals will be employed. They will carry a revolver and twelve rounds. Instruction in cycling (voluntary) will be given in future at the General Military Academy.

Officers interested in the training and employment of carrier pigeons for military purposes will be glad to know of a comprehensive essay on the subject, published in the (Spanish) "Memorial de Ingenieros de Ejército" for February, entitled "Manual de Colombicultura y Telegrafía Alada," by Captain L. de la Tejera y Magnin.

Sweden.—The following brief account of the new organization of the Swedish army is taken from the "Invalide Russe." The army is divided into 6 army corps (all organized alike, except that the 6th is stronger than the others) and 1 special cavalry corps. Five of the army corps are distributed along the coast, and the 6th forms a central reserve. The units of the several arms are as follows:—

Infantry.—This now consists of 81 battalions, including 2 destined for the garrison of the island of Gotland. Hitherto there have been only 48 battalions. The cadres of the infantry have been increased by 106 officers, 125 under-officers, and 214 corporals.

Cavalry.—This now numbers 50 squadrons (in place of 47).

Field Artillery.—This comprises 40 batteries, 36 being organized in 6 regiments (of 6 batteries each), one for each army corps, 2 batteries for the cavalry corps, and 2 for the island of Gotland. Hitherto the number of batteries has been 36.

Fortress Artillery.—This is now completely separated from the field artillery, and consists of 2 battalions (in place of 1), one being destined for the works at Karlsborg.

Engineers.—This consists of 6 engineer companies and 2 park companies. Formerly there were only 7 companies in all.

Train Formations.—These now consist of 4 battalions (instead of 2).

The term of liability to military service is now increased to 20 years. The men during their first 8 years of service form the standing army, during the next 4 years they belong to the Reserve, and during their last 8 years form the Landsturm, which is only liable for serving in home defence.

The recruit training lasts 90 days; but during their first year of service the men, with the exception of those of the cavalry, are to be called up for an additional training of 60 days, forming special recruit companies. During the second year they will undergo a training of 22 days, being then incorporated with the formed soldiers.

Switzerland.—The autumn manœuvres of 1893 will begin on the 7th and end on the 14th September, the mass of the troops being dismissed to their homes on the 15th. The manœuvres will be carried out by the 3rd and 5th divisions, which form the IInd army corps; the ground selected being Glovelier-Liestal. For the first time since the formation of army corps in 1892 there will be an army corps manœuvre at the end of the autumn exercise, the 3rd and 5th divisions manœuvring for 1½ or 2 days as an army corps against a marked enemy formed of two recruit battalions ("Allgem. Schweiz. Mil.-Ztg.").

According to the "Revue Mil. Suisse" a committee of 24 colonels has recently assembled at Berne, under the presidency of the Chief of the Military Department, to consider the question of the reorganization of the army. It is said to have decided to add two yearly classes of men to the *élite*, that is, to make them serve two years longer in the troops of first line, thus reducing the second line to 10 classes of age, 5 of which would furnish the Reserve and 5 the Landwehr. The Landsturm would consist of 10 yearly classes. It is proposed to raise the battalion to 1,000 men, and to make the captains mounted officers. It is reported that the number of field batteries is to be increased from 48 to 60, and that of the squadrons of dragoons from 24 to 36.

Turkey.—The following details regarding the officers and military schools of Turkey are taken from the "Deutsche Heeres-Zeitung." The schools for the training of officers are as follows:—

1. The War School in Constantinople, the pupils of which, after a three years' course, join the infantry or cavalry as Lieutenants, the "bifurcation" taking place at the end of the first year.

2. The Artillery and Engineer School in Constantinople, with a four years' course, the pupils becoming Lieutenants at the end of the third year, and First Lieutenants at the end of the fourth.

3. The General Staff School, to which those infantry and cavalry Lieutenants are admitted who got highest marks on leaving the War School. They are at once promoted to First Lieutenants, and, after a three years' course, become Captains of the General Staff.

4. Surgeons' and Veterinary-Surgeons' School, the pupils of which receive Captain's rank after a six or four years' course respectively.

5. Advanced Artillery School, to which those First Lieutenants of artillery are

admitted who obtained highest marks on leaving the Artillery School. They become Captains after a three years' course.

For preparation for the above schools there are certain preparatory schools, which again are supplied from twenty-six elementary schools; the latter are attended for four years, the pupils wearing military uniform the while.

The officers consist in general of two very distinct classes; those who have gone through the schools, and those who have been promoted from the ranks. Of the latter only a portion can read and write, the rest being absolutely illiterate. Promotion up to Captain goes regimentally; from Vice-Major, through the general list. Half the number of vacancies have theoretically to be filled up by officers who have passed through the schools, but the lists are carelessly kept, and many promotions are made through interest alone. As there is no age limit for the several ranks, there are many white-haired men in the junior ranks, and the Commander of a cavalry regiment now in Albania is nearly ninety years of age. Nothing is done for the military education of the officers; there are no military libraries, only one military newspaper, no such things as lectures, and no manœuvres on the map or with cadres on the ground. Owing to the vast difference of origin of the officers, there is not a trace of comradeship. One of the most remarkable virtues of the Turkish officers is their contentment and thriftiness, so that they hardly ever get into debt, although their pay is often withheld for months. They have no common mess. Nearly all officers up to the rank of Vice-Major sleep in barracks; those of a company, squadron, or battery in one room. Another peculiarity is that all officers, from lowest to highest, receive daily rations in kind or cash. The lower grades have exactly the same ration as the men, the cash value of their rations being 1*l.* a month. Staff officers and Generals have a less varied ration, worth 14*s.* a month. The number of rations issued varies with the rank of the officer, Lieutenants receiving one, and the Field Marshal fifteen.

United States.—In the "Revue de Cavalerie" for February will be found a short account, *à propos* of the celebrated ride between Berlin and Vienna, of remarkable distance-rides which have been accomplished at various times by American officers and troops of cavalry.

FOREIGN PERIODICALS.

MILITARY.

Militär-Wochenblatt.—No. 17. "Advanced Positions: Former and Present Views thereon." "Captain Souchier's New Range-finder." No. 18. "Advanced Positions" (*continued*). Criticism of Captain Molard's "Puissance Militaire des États de l'Europe." No. 19. "The 4th Battalions." "The Military Strength of the European States" (*concluded*). "The Italian Siege and Fortress Artillery." No. 20. "Trial Firing with Falling and Self-registering Field Targets." "Italian Railways under Construction." "Military News from Switzerland." "Winter Manœuvres in the Warsaw District." "Australian Military Forces." No. 21. "Defence of the Schloss Goldenfels by 2nd Lieutenant von Gauvain on 20th March, 1793." "The Great Autumn Manœuvres in France in 1893." No. 22. "Russia's State of Readiness for War." No. 24. "Russia's State of Readiness" (*continued*). "Armament of Field Artillerymen." No. 26. "Review of Captain Hoenig's new work, 'Der Volkskrieg an der Loire,' 1893." "On Regimental Histories" (what they ought and ought not to contain). No. 27. "The proposed Law regarding the (French) Conseil Supérieur de la Guerre." No. 28. "*A propos* of the article (in Nos. 17 and 18) on Advanced Positions." "The Cadres of the French Infantry." "The Bulgarian Army and its Budget for 1893."

Neue Militärische Blätter.—February. "Art in War" (*continued*). "Contribution to the History of the Prussian Reserve Corps, Magdeburg to the Capitulation of Prenzlau" (*concluded*). "On Submarine Mines" (*concluded*). "First Fights of the Army of the Rhine, 1870" (*continued*). "Uniform in the Light of Sanitary Science," by Professor Jäger. "Views of a superior Cavalry Officer on the Training of our Cavalry" (General von Senfft-Pilsach). "The Present State of Field Artillery." March. "History of the Prussian Reserve Corps" (*continued*). "The War Plan of the Triple Alliance as against the Dual Alliance." "Uniform in the Light of Sanitary Science" (*concluded*). "The War in Chili." "Present Military Importance of the Alpine Region." "First Fights of the Army of the Rhine" (*continued*). An article regarding "The Present State of Feeling in France towards Germany."

Jahrbücher für die Deutsche Armee und Marine.—March. "Custozza, an Example of Operations on Interior Lines." "From the Morocco Camp" (an account of the military forces). "Use of Circular Railways and Circuitous Railways (Umgehungs-Bahnen) for Tactical Purposes." "Speed of the Armour-clad Ships of the Present Day." "Care of our Wounded in Future Wars" (concise description of the medical field arrangements in the German Army). "The Most Important Maps of Germany, France, and Europe in general, from a Military Point of View." The article entitled "Umschau auf militärtechnischen Gebiet" gives an account of recent progress in artillery, armoured construction, and small-arms in the principal nations, and contains a useful table descriptive of the rifles at present in use in Europe.

Organ der Mil.-Wiss. Vereine.—Heft 2. "Improvement of the Soldier's Rations." "Official German Account of the War of 1870-71," translated into Russian, with critical remarks by Major-General Suchotin, of the Russian General Staff.

Journal des Sciences Militaires.—March. "Strategy of Marches." "Creation and Organization in France of a Colonial Army." "Study on Cavalry" (*continued*). "A Campaign of Eight Days. The War in Chili." "The Campaign of 1814" (*continued*). "The *Rôle* of Artillery in the Fight of the Corps d'Armée." "Tactical Instruction of Officers" (*continued*). "The English Campaign in the Soudan, 1884–85."

Spectateur Militaire.—1st March. "Examination of the Proposed Law for Altering the Cadres of the French Army." "Operations of Junot and Wellesley before Lisbon" (*continued*). "Tactics of the Wars of the Middle Ages" (*continued*). "Studies on the Campaign of the Loire" (*continued*). "The King's Gendarmes." 15th March. "Law regarding Cadres" (*continued*). "Operations of Junot and Wellesley" (*continued*). "Tactics of the Wars of the Middle Ages" (*continued*). "Studies on the Campaign of the Loire" (*continued*). "The King's Gendarmes" (*continued*).

Revue du Cercle Militaire.—No. 10. Résumé of an article in the "Schweizerische Monatschrift" on the Swiss fortifications and the foreign press, the object of which is to demonstrate that the works are not directed against the States forming the Triple Alliance, as asserted by many German and Italian organs (notably the "Deutsche Heeres-Zeitung"), but solely to enable Switzerland to maintain her loyal attitude of strict neutrality. Conclusion of article on "The New Organization of the Spanish Army." No. 11. "A General Description and Comparison of the Mannlicher and the Daudeteau Rifles." No. 12. "Plan and Description of New Cavalry Barracks at Vincennes." "Reorganization of the Cavalry School at St. Petersburg." "Italian Railway System." No. 13. "A Flying Machine." "Italian Railways" (*continued*). "The Defence of the Eastern Frontier of Switzerland, and the importance of Lutziensteig."

Revue de Cavalerie.—February. "Letters of a Cavalryman. Cavalry on the Field of Battle" (*continued*). "The Combat of Leuze (19th September, 1691)."

"The Cavalry at the Manœuvres of the 9th and 12th Corps in 1892" (*continued*). "Military Memoirs. Souvenirs of Commandant Parquin." "The Paces of Horses revealed by the Experimental Method" (*continued*). "The Winter Exercises of a Regiment of Dragoons, 1778–79." "The Ride from Vienna to Berlin."

Revue du Génie Militaire.—November—December, 1892. "Notice of the New Bridging Equipment for Advanced Guards." "Military Telegraphy and Telephony" ("Le Relais d'Appel phonique Teilloux").

Revue du Service de l'Intendance Militaire.—Continuation of comprehensive article on "The Administration of the Austro-Hungarian Army." "Task and Present State of the Swiss Army."

Revue Militaire Suisse.—March. Continuation of article on the Swiss Landsturm.

NOTICES OF BOOKS.

Essays on Naval Defence. By Vice-Admiral P. H. Colomb. W. H. Allen and Co., 1893. Price 6*s*.

Admiral Colomb, in collecting and publishing in a single volume a series of essays which he has contributed from time to time during the last twenty years to the "Journal of the Royal United Service Institution," as well as to Lord Brassey's "Naval Annual," has conferred a benefit on the Services as well as on the public. A portion of these papers deals with what has been aptly termed the higher policy of defence. The author was the first to publicly challenge the policy which had prevailed for a number of years of providing extensive local defences against some hypothetical attack rather than meeting it at sea in the first instance. In the two chapters "The Naval Defences of the United Kingdom" and "Local Fortifications and a Moving Navy," the fallacy of extensive fortification for a country which must keep the sea, or lose all which makes it a great Empire, is clearly pointed out. History is appealed to with success to show that when we have to fall back on a purely defensive attitude our position is perilous. As Pitt said in defence of having made peace in 1783 when we were hard pressed, "We might have lost Jamaica," and he added, "a defensive war can only end in inevitable defeat." The views enunciated by Admiral Colomb met with considerable opposition from those who understood him as being against all fixed defences; and some expressions he used laid him open to this charge. Speaking of fortifying the commercial ports, he had said, "It is a mere instinct with me which admits light batteries at the entrances of such ports. I cannot, when I face it, reconcile their existence to my reason." He doubtless had in view such a fleet in the possession of this country that no attack could be practicable; and, taking defence as a whole, for which a certain sum of money is granted, he would prefer spending all on guns and torpedoes that can be carried in ships rather than allocate any considerable portion to immovable batteries and submarine mines. After all, a fort is but an anchored ship, while the torpedo vessel has the advantage of locomotion over the submarine mine. But though in theory we may trust solely to general defence at sea for local protection, it is possible for an enterprising hostile cruiser to appear off a port where a few hours' undisturbed possession, in the absence of any defence on the spot, would enable him to formulate demands difficult under the circumstances to resist. This does not apply so much to home ports as to isolated points abroad. Hence the strongest advocate of ships against forts admits the necessity of preventing an anchorage being thus utilized by an enemy, and a single battery of light

guns will, in most cases, effectually command the approach. It is against the excess of fortification that in these two chapters Admiral Colomb mainly directs his pen. For many years, when any doubt has arisen as to the adequacy of our fleet, there has been a tendency to fly to forts as a substitute. But the nation generally has not, in the past, adopted this view. In a letter from the Duke of Richmond to Pitt, dated September 18, 1789, the former says, "I perfectly agree with you that the popular prejudice in favour of the navy and against fortifications is so great that it would be much easier to avail oneself of the former than to combat the latter." But in our own time the influence of two men diverted attention from the main defence of this country, and concentrated it on extensive additions to permanent fortifications and large garrisons. In the House of Commons in 1845, Lord Palmerston said, "The Channel is no longer a barrier: steam navigation has rendered that which was before impassable by a military force nothing more than a river passable by a steam bridge." In 1860 he brought forward his motions for fortifying the dockyards, which, after a long debate, were carried. The Duke of Wellington, in writing to Sir John Burgoyne in 1847, considered that steam had rendered us assailable on all parts of our coast; and that a hostile force could be landed at any time of tide or in any weather. To meet this danger, he advocated an efficient field army, "aided by all the means of fortification which experience in war and science can suggest." It is now generally conceded that steam has not fundamentally altered the principles of naval strategy. If it renders attack less uncertain, it enables the defence to be equally independent of wind and weather. Squadrons can be reinforced, and fleets concentrated, with a facility formerly unknown. We are in danger only when means do not exist of carrying such measures into effect.

An instructive chapter in this volume is that dealing with Blockade. It is considered by many that this form of warfare is now impossible; but Admiral Colomb demonstrates that steam gives equal, if not greater, advantages to the blockading force. A good example of this is to be found in the close guard kept over the Southern ports towards the close of the American Civil War. And in the old wars there are innumerable instances of fleets breaking through a rigorous blockade when the spirit and desire to do so were present. It is difficult to see what other course can be pursued in the future. The closest touch must be kept of an enemy, and it can only be done by being in the vicinity of his vessels. Torpedo-boats may modify the necessary arrangements, but will not keep us in our ports. No special branch of warfare will revolutionize great principles. The other chapters in this book deal with Convoy and Fleet Tactics, the whole forming an excellent text-book for all interested in the important subject of Imperial defence.—S. E.-W.

État Actuel de la Marine de Guerre. Par L. E. Bertin, Directeur des Constructions Navales, Directeur de l'École d'Application du Génie Maritime. Paris: Gauthier-Villars, 1893. Price 2 fr. 50 c.

We cordially recommend this admirable treatise on existing navies to the notice of the naval profession. The distinguished author is too well known by his papers contributed to the "Proceedings of the Institution of Naval Architects," and other works, to need any introduction. He is the designer of the "Sfax" cruiser. He writes:—

"A war navy has the following objects:—

"1. Naval supremacy, which comprehends the complete security of your own shores and the power of menacing those of the enemy, by the attack or blockade of his ports and the interception of his commerce. Such is the object of squadrons.

"2. To assure the security of the coasts and ports in face of an enemy master of the sea. Coast-defence ships are constructed for this purpose, towards which other vessels may co-operate, even those whose age renders them unsuitable for a more active part.

"3. To pursue and capture merchant ships and cruisers. This is a general and necessary service, whether the command of the sea be possessed or not. It comprises various operations, and employs vessels of every grade in the scale of magnitude, from 1,500 tons to 10,000 and even 14,000 tons."

The author's classification is remarkable and suggestive, as including the Italian

ships "Italia" and "Lepanto," with others of like type, under the head of cruisers.

The author gives a table of the penetrations of modern projectiles through steel, of the distances from French ports of various points, of the number of cruisers possessed by each nation, as well as many plans of various types of vessels.

Nothing is said of the penetrations or effects of armour-piercing or common shell, nor of the effects of torpedoes or explosives, the work being devoted to the description of existing ships.—S. L.

A Précis of Modern Tactics. Originally compiled in 1873 by Colonel ROBERT HOME, R.E., A.Q.M.G., and revised and re-written by Lieutenant-Colonel SISSON C. PRATT (late), R.A. Official, London, 1892. Price 4*s.* 6*d.*

To bring up to date a tactical treatise written in 1873, and at the same time preserve its leading characteristics, was a work demanding considerable tactical knowledge and literary skill. It is well known that Colonel Home was unable to carry out the task of revising his book, and the difficulty of effectively dealing with it resulted in its being for at least ten years past practically obsolete. Probably no better qualified officer than Lieutenant-Colonel Pratt could have been found to take the difficult task in hand, and, viewed as a whole, the result of his labours must be considered eminently satisfactory. There is a laudable avoidance of cut and dry maxims of the drill-book order, and, on the other hand, interesting examples from actual warfare are adduced in illustration of nearly every principle or opinion expressed. With a wealth of example and comments it is shown that there are two sides to most tactical problems, and that the theories of the study are often in conflict with the actual experience of war. The chapter on infantry enters fully into the principles governing the attack, and emphasizes the importance of developing the *morale* of the men and the lesser fighting units. The author's remarks on the "group" system are worthy of note: "Any arrangements based on the intimacy of men, barrack-room ties, the influence of well-known leaders, &c., are only applicable to the field of manœuvre. The ties binding men in the preliminaries of attack are irrevocably dissolved before a critical point in the advance is reached. It is only by simplicity that results are ensured in war. The object of any system of groups is to aid the control of the company officers, and not to create a series of quasi-independent units." In the chapter dealing with cavalry, modern ideas as to the action of the mounted arm, as reconnoitring bodies on the theatre of war and as fighting masses on the battlefield, are put forward with great clearness. Here, as throughout the work, the examples are admirably chosen. For an artillery officer, the author seems to have a curious distrust of range-finders, and he estimates at a very modest value the anticipations of some of his fellow-gunners as to shrapnel fire. The chapter on the service of security is of great interest and presents several novel ideas. In dealing with the decisive conflict of large masses, von der Golz's renowned work has been extensively used, but the most modern French writers have also been largely drawn upon, and the comparatively new idea of an "artillery fighting mask" will possibly furnish a field for future discussion. In a modest preface the author expresses the hope that the work may prove of interest to regimental officers, but it may be safely said that, without perhaps agreeing with all the views put forward or hinted at, no officer can arise from the perusal of this book without feeling that he has gained much information, nor without carrying away with him valuable material for reflection.

Cinquante Problèmes Tactiques discutés et traités sur la Carte de Rethel. Par Le Commandant DEVAUREIX, Chef d'État-Major de la 2e Division d'Infanterie. (With Map.) Paris: Berger-Levrault, 1891. 7 fr. 50 c.

This work ought to be studied by officers of all arms. Its object is to impress on the military student the essential principles which should be borne in mind in the practice of combined tactics of small units. Being written by a Frenchman for French officers, the units employed in the problems are naturally those obtaining in their own army, and the formations and mode of carrying out the duties are those prescribed in the French Regulations; but the operations described and the

principles inculcated are of general application, and any soldier can follow the problems and understand the operations without necessarily having a knowledge of the details of the French organization and regulations for the several arms. The problems are all formed and worked out on the same plan, being presented under the following heads:—

1. The situation and question for resolution, these being such as would occur in actual warfare.
2. Reflections and resolutions to be at once taken, which include the object to be attained and the means to be employed to attain it.
3. Orders given to carry out the proposed operations.
4. Observations, designed to inculcate certain important principles, to illustrate the proper utilization of the ground, or to demonstrate the advantages of particular dispositions.

It is not too much to say that no more valuable, because sound, simple, and complete, treatise on applied tactics has ever been presented to the military student, and it is much to be wished that it could be translated into English, and so made available for the instruction of our officers of all branches of the Service.

Études Pratiques de Guerre. By General LAMIRAUX. 2nd edition. Paris: Lavauzelle, 1892. 6 fr.

General Lamiraux is the chief of the Ecole Supérieure de Guerre, and his book is in all respects worthy of the important position he holds. His main object in this work is to impress upon the military student the danger of dwelling in a region of pure theory, and to show what a wide distinction there is, and always must be, between the most profound and convincing theory and the reality of actual practice. In a word, his teaching is, before all things, practical.

The work is divided into seven parts. The first deals with marches, the second with the service of security, the third with deployments, and the remainder with the combat. Each part is illustrated by examples taken from past wars.

English Army Lists and Commission Registers, 1661—1714. (Vol. 1, 1661—1685.) Edited by CHARLES DALTON, F.R.G.S. Eyre and Spottiswoode, 1892. Price 25*s.*

This work is a monument of research, and is a mine of information for those interested in what one is tempted to term the folk lore of our army.

That army, as a standing institution, dates its birth from the year of grace 1661; but from that time up till the year 1740 the "Army List" (such as we now understand the term) had no existence, if we except the solitary instance, quoted in the introductory chapter of "A General and Complete List, Military, &c.," compiled by one Nathan Brooks in 1684. It is to make good this hiatus that Mr. Dalton has set himself in the compilation now before us. To understand the nature of this task, it is necessary to follow Mr. Dalton's preface, where we are told that the material available consists of "a few odd lists of officers of the British army serving on full pay, and a heterogeneous collection of MS. commission registers," involving many a weary hour's search at the War Office, Record Office, and other resorts usually shunned by the ordinary mortal.

It is, however, no mere bald record of names which Mr. Dalton has produced; but in numerous instances copious notes are given, throwing as much light as is possible within the compass of the book upon the personality of the more prominent individuals. For example, we find the following entries, taken at random. In the commission register of 1672 there is the name of Sir Jno. Fenwick, Kt. and Bart., a Cornet and Major of the Queen's troop of Guards, against whom is given the significant remark, "Afterwards Colonel of a regiment of foot. Beheaded in 1697."

Under the heading of "H.R.H.'s Regiment of Horse, 1678," there figures Cornet Cherington Talbot, as to whom a note states: "Son of Sir Jno. Talbot. Mortally wounded in a duel with Captain Love, after the battle of Sedgemoor."

In the list of the Royal (Scots) Regiment of Foot we find a Captain Lord George Hamilton, who, the notes inform us, was "fifth son of the Duke of Hamilton (so created) and Anne, Duchess of Hamilton. Colonel of a regiment of foot in Ireland

in 1689. Created Earl of Orkney by William III. Premier Field Marshal of England, 1736. Died 29th January, 1737."

These are mere haphazard excerpts from a work which also contains such famous names as those of George Monk, Duke of Albemarle, Prince Rupert, and John Churchill, Duke of Marlborough.

Mr. Dalton is well qualified for the task he has undertaken, as those who are familiar with his "Waterloo Roll-call," "Life of Sir Edward Cecil, Viscount Wimbledon," and other works involving military, historical, and genealogical research, can abundantly testify.

Genius has been defined as a capacity for taking trouble, and the present compilation shows ample traces of it on every page. Mr. Dalton's volumes will form, when complete, a valuable contribution to our military history. That now published is provided with an admirable index.—J. W. M.

Arms and Explosives. The Monthly Journal of the Trades. Effingham House, Arundel Street, Strand. Price 6*d.*

The first number of this Journal appeared in October. The monthly issues contain much information regarding the latest inventions affecting small arms and ammunition, and cannot fail to interest both the soldier and the sportsman.

List of Recent Foreign Books (Military).

L'Administration Militaire Italienne; son Organisation et son Fonctionnement en Temps de Paix et en Temps de Guerre. Par L. Dupain, Sous-Intendant Militaire. Paris: Charles-Lavauzelle, 1892. 3 fr. 50 c.

Notes sur le Canon de Campagne de l'Avenir. By G. Moch, Captain of Artillery. Paris: Berger-Levrault, 1892. 3 fr.

Quelques Indications pour le Combat. By General Ferron. 5th Edition. Paris: Baudoin, 1892. 1 fr. 50 c.

Les Méthodes de Guerre Actuelles et vers la Fin du XIXe Siècle. By General Pierron. Tome 1, 2nd Ed.; Tome 3, 1st Ed. Paris: Baudoin.

Tome 1. Part 1. (1) "Conditions à remplir pour commander." (2) "Unité de Commandement." (3.) Rôle du Ministre de la Guerre." 7 fr. (1886).
Part 2. (1) "Places fortes." (2) "Déploiements stratégiques." 6 fr. 50 c. (1889).
Part 3. In the press.
Tome 2. In preparation.
Tome 3. (1) "Avant-postes." (2) "Cantonnements." (3) "Bivouacs." (4) "Camps." (5) "Investissements." 2 vols. 10 fr. (1881.)

Attaque d'un Plateau. By Lieutenant (now Captain) de Cugnac. Paris: Baudoin, 1891. 1 fr.

Défense d'un Plateau. By Captain de Cugnac. Paris: Baudoin, 1893. 1 fr. 50 c.

Le Combat et les Feux d'Infanterie. De l'Offensive—De la Défensive. By General ***. Paris: Baudoin, 1892. 2 fr. 15 c.

La Vie Militaire au Tonkin. By Captain Lecomte. With illustrations. Paris: Berger-Levrault, 1892. 10 fr.

Guerre de 1870—1871.—*Paris, Malmaison, Le Bourget et le Trente-et-un Octobre* (21 *Octobre*—1 *Novembre*). By A. Duquet. Paris: Charpentier, 1893. 3 fr. 50 c.

A continuation of M. Duquet's Studies on the War. "Frœschwiller, Châlons, Sedan," "Les Grandes Batailles de Metz," "Les derniers Jours de l'Armée du Rhin," &c.

Quelques Observations sur la Service de l'Artillerie en Campagne. By C. DE L. Paris: Baudoin, 1892. 2 fr.

La Poudre sans Fumée et les Poudres Anciennes. By POUTEAUX. Dijon: Dainidot, 1892. 5 fr.

Das Heer und die Stenographie. By Major G. GACK. Darmstadt: Zernin, 1892. 2 mks.

An exceptionally interesting essay on the importance of shorthand writing for military purposes, especially in the field.

Moltke's Taktische Aufgaben aus den Jahren 1858 *bis* 1882. Herausgegeben vom Grossen Generalstabe, &c. With plans, sketches, &c. Berlin: Mittler, 1892. 6 mks.

Der Vaterländische Frauen-Verein in Vergangenheit und Gegenwart. A speech read on the 25th anniversary of the Society in Berlin, and showing the nature of the work undertaken by its members. Berlin: Mittler, 1892. 30 pf.

Artaria's Universal-Administrativ-Karte der Österreichisch-ungarischen Armee mit der Einteilung des Reiches in die Territorial- und Ergänzungsbezirke des k.u.k. Heeres und der Kriegsmarine, der k.k. und k. ungarischen Landwehren und des Landsturms. By Colonel ZIPSER. Scale, 1/1,500,000. 2nd Edition. Vienna: Artaria and Co., 1892. 2.40 fl.

List of Modern Works on Military History and Tactics.

In the "Jahrbücher für die Deutsche Armee und Marine" for November, 1892, is a list of German works on the above subjects recommended for study.

Attention is directed to a very instructive article in the "Jahrbücher" for December, 1892, entitled "Militärische Gedanken über die Niederwerfung eines Aufstandes in Grossen Städten." There is so little literature on the subject of handling troops of all arms in street-fighting, that members who can read German may with advantage study this essay.

Officers who are interested in the study of the scientific basis of the art of training horses for military purposes may, perhaps, already have read the anonymous French author's work, "Équitation diagonale dans le mouvement en avant" (Paris: Berger-Levrault, 1892), which has been received with so much favour in France. If so, they will be glad to know that Colonel Spohr, an acknowledged authority on the subject, commenced a criticism of the book in the "Deutsche Heeres-Zeitung," No. 18, of 1893.

(NAVAL.)

Les Guerres Navales de Demain. Par le Commandant Z——, et H. MONTÉCHANT. Avec une préface de M. le Contre-Amiral RÉVEILLÈRE. Paris: Berger-Levrault, 1892. 3 fr.

La Marine Royale en 1789. Par M. LOIR. Paris: A. Cohn. 3 fr. 50 c.

La Marine Russe. By ALEXANDRE MIKHAILOVITCH. A splendid album containing 56 plates, reproduced in chromolithograph, of ships from drawings by Lieutenant V. Ignatius. St. Petersburg: A. Zinserling. 25 mks.

Essai sur l'Histoire de l'Administration de la Marine de France (1689—1762). By LAMBERT DE SAINTE-CROIX. Paris: Lévy. 7 fr. 50 c.

Der Seekrieg, der Geschwaderdienst und die Bedeutung der Kriegswerften. By B. VON WERNER, Contre-Admiral. With 46 plans. Darmstadt: A. Bergsträsser, 1893. 4 mks.

[*Issued with Army Orders, dated 1st January, 1893.*

LIST

OF THE

ARMY REGULATIONS

AND

INSTRUCTIONS IN FORCE

ON THE

1ST JANUARY, 1893

LIST OF THE ARMY REGULATIONS AND INSTRUCTIONS IN FORCE ON THE 1ST JANUARY, 1893.

	Promulgated by		
	Army Circular, Army Order, or General Order.	Clause or number.	Year.
Academy, Royal Military, Regulations	A.O.	194	1892
†Allowance Regulations	A.O.	195	1892
Armourers, Instructions for, in Care, Repair, Browning, &c., of Arms, &c.	A.O.	196	1892
Army Circulars:—			
Up to 31st December, 1882, reprint	A.O.	252	1889
From 1st January, 1883, to 31st December, 1887.			
Army Orders, from the 1st January, 1888. ..			
Army Service Corps, Drills and Exercises, Book of	A.O.	192	1891
* ,, ,, Duties, Regulations.. ..	A.O.	420	1889
* ,, ,, Manual for Field Service ..	A.O.	399	1889
* ,, ,, Standing Orders	A.O.	378	1890
*Artillery Company, Honourable, Regulations for	A.O.	477	1889
* ,, Field, Drill	A.O.	128	1889
,, Garrison, Drill, Vol. II.	A.O.	52	1891
,, ,, ,, Vol. I.	A.O.	..	1893
,, ,, Manual	..	..	1887
* ,, Manual for Field Service	A.O.	14	1889
,, Mountain, Drill	..	..	1891
,, Siege, Drill	A.O.	76	1891
* ,, Standing Orders	A.O.	474	1889
Asylum, Royal Military, Standing Orders.. ..	..	..	1874
Barrack Furniture, Schedules	A.O.	90	1889
*Bearer Companies and Field Hospitals, Manual for Field Service	A.O.	481	1888
Canteens, &c., Rules for	A.O.	435	1889
Cavalry Drill, Vol. I. (provisional edition) ..	A.O.	259	1891

† Annual edition. * Under revision.

	Promulgated by		
	Army Circular, Army Order, or General Order.	Clause or number.	Year.
Cavalry Drill, Vol. II.	A.O.	9	1892
„ „ III.	A.O.	231	1892
*Cavalry, Manual for Field Service	A.O.	481	1888
Changes in War Matériel, and Patterns of Military Stores, Lists of, from 1868.			
Channel Islands Militia, Regulations	A.O.	132	1890
Chaplains, Instructions for Guidance in Ministration to the Troops	A.O.	239	1890
Civilian Subordinates, Travelling Expenses, &c. ..	A.C.	185	1887
Clothing and Free Kit, Rates of Compensation for	A.O.	51	1889
„ and Necessaries, Prices of, Regular Army and Militia..	A.O.	43	1892
„ „ „ Volunteers ..	A.O.	96	1892
„ „ Rates for Making-up, &c.	A.O.	27	1890
„ „ Rates for Marking ..	A.O.	238	1890
* „ Regulations	A.C.	176	1887
College, Royal Military, Regulations	A.O.	30	1892
Commissions in the Regular Forces for University Candidates ..	A.O.	149	1892
„ „ „ for Officers of Militia ..	A.O.	256	1891
„ „ „ for Officers of Colonial Local Military Forces.	A.O.	10	1892
Correspondence, Registration of, in Military Offices	A.O.	135	1891
*Cyclist, Infantry Section, Drill of..	A.O.	115	1890
Dress Regulations	A.O.	81	1891
Drum and Flute Duty, Infantry	..	..	1887
*Encampments, Regulations	A.O.	53	1890
*Engineer Regulations	A.O.	122	1892
Equipment Regulations	A.O.	234 & 363	1890
		236	1891
Examination in Range-finding, Royal Artillery ..	A.O.	133	1889
Explosives, Instructions for Classification and Stowage for Sea Transport	A.O.	218	1891
Fares by Steamboats	A.O.	382	1890
Field Army Establishments (Home Defence) ..	A.O.	234	1892

* Under revision.

	Promulgated by		
	Army Circular, Army Order, or General Order.	Clause or number.	Year.
Field Army Establishment (Service Abroad) ..	A.O.	235	1892
Field Engineering, Manual	A.O.	269	1889
*Field Service, Manuals:—			
Army Service Corps	A.O.	399	1889
Artillery, Royal	A.O.	14	1889
Cavalry	A.O.	481	1888
Infantry			
Medical Staff Bearer Companies and Field Hospitals			
Mounted Infantry	A.O.	14	1889
Post Office Corps	A.O.	481	1888
Provost-Marshals and Military Police ..	A.O.	230	1889
Signallers	A.O.	481	1888
Financial Instructions	A.O.	32	1892
Forms and Books, Army	A.O.	299	1889
General Orders, up to the 31st December, 1887.			
Guncotton, Destruction and Disablement of Guns by	A.C.	137	1886
*Honourable Artillery Company Regulations ..	A.O.	477	1889
Hospital Equipment, Schedules	A.O.	292	1889
Income Duty Regulations	A.C.	234	1884
Indian Staff Corps, Admission to	A.O.	82	1891
*Infantry Drill	A.O.	62	1892
* ,, Manual for Field Service	A.O.	481	1888
Lines of Communication, Organization of, and Supply of Stores to an Army in the Field ..	A.O.	376	1890
*Magazine Regulations	A.O.	48	1887
Magic Lanterns, Supply of, &c.	A.O.	162	1891
*Medical Regulations. Part I.	A.O.	98	1890
* ,, ,, ,, II. (Manual for the Medical Staff Corps)	A.O.	296	1889
,, Staff, Regulations for Admission to ..	A.O.	242	1891
* ,, ,, Manual for Field Service, Bearer Companies and Field Hospitals..	A.O.	481	1888
*Military Law, Manual of	A.O.	52	1888
,, ,, and Procedure, Notes on	A.O.	336	1890
Militia, Medical Staff Corps, Memorandum of Instructions	A.O.	223	1891

* Under revision.

	Promulgated by		
	Army Circular, Army Order, or General Order.	Clause or number.	Year.
†Militia Regulations..	A.O.	157	1891
„ Reserve, Mobilization and Demobilization	A.C.	13	1887
Mobilization, Home Defence (Regular Forces), Regulations for	A.O.	174	1892
*Mounted Infantry, Manual for Field Service and Regulations..	A.O.	15	1889
*Musketry Instruction, Regulations and Rifle Exercises, Lee-Metford Rifle	A.O.	66	1892
* „ „ Martini-Henry Rifle and Carbine	A.O.	113	1888
Nursing Service, Regulations for	A.O.	458	1889
*Ordnance Artificers, Regulations	A.O.	67	1892
„ Machinery, Appointment of Inspectors of			
„ Store Corps, Instruction of Non-commissioned Officers and Men ..	A.O.	224	1892
* „ „ Regulations	A.O.	62	1890
Pack Animals, Instruction for Saddling and Loading	A.O.	13	1889
†Pay and Promotion Warrant	A.O.	108	1892
*Post Office Corps, Manual for Field Service ..	A.O.	481	1888
Prisons, Military, Rules	A.C.	184	1880
„ Provost, Rules	A.O.	156	1892
Prizes for Skill-at-Arms, Royal Artillery, Instructions for Competition	A.O.	65	1891
Prizes for Sword and Lance Practice, Rules for Competition	A.O.	169	1892
*Provost-Marshals and Military Police, Manual for Field Service	A.O.	230	1889
†Queen's Regulations	A.O.	49	1892
*Railways in War, Regulations for the working of	..	..	1888
„ Military, Manual of	A.O.	130	1889
Railway Trucks, Mounting Guns on	A.O.	334	1889
Range Finding, Examination in, Royal Artillery	A.O.	133	1889
Recruiting Regulations	A.O.	157	1892
Recruits, Schedule of Age, &c., for..	A.O.	239	1892
*Regimental Debts Act, Regulations under ..	A.C.	99	1881
*Reserve, 1st Class Army, Regulations	A.O.	88	1889

† Annual edition. * Under revision.

	Promulgated by		
	Army Circular, Army Order, or General Order.	Clause or number.	Year.
Savings Banks, Military, Regulations	A.C.	41	1883
Schoolmasters, Instructions for guidance of Candidates	A.O.	205	1892
Schoolmistresses, Instructions for guidance of Candidates			
Schools, Army, Regulations	A.O.	200	1891
*Signallers, Manual for Field Service	A.O.	481	1888
*Signalling, Manual of Instruction in	A.O.	201	1891
Single Stick Drill.			
Skill-at-Arms, Prizes for, Royal Artillery, Instructions for Competition	A.O.	65	1891
Snider Carbine, Artillery, Manual and Firing Exercises	A.O.	292	1890
Staff College Regulations	A.O.	374	1890
Steamboat, Conveyance of Troops by, List of Fares	A.O.	382	1890
Stores, Supply of, to an Army in the Field (Abroad), and Organization of the Lines of Communication	A.O.	376	1890
Stores, Supply of, &c. (Ordnance Store)	A.C.	270	1881
*Stores, Vocabulary of	A.C.	40	1886
Submarine Mining and Telegraph Stores and Apparatus, Instructions for Storage and Inspection of	A.O.	216	1892
Submarine Mining, Regulations for Course of Instruction in	A.O.	158	1891
Submarine Mining Service in India, Regulations for Non-commissioned Officers, R.E., employed on	A.O.	394	1890
Submarine Mining Vessels, Machinery and Boilers	A.O.	338	1890
Sword and Carbine Sword-bayonet Exercises, Infantry	A.O.	13	1892
Sword and Lance Practice, Rules for Competition,	A.O.	169	1892
Transport Duties, Regimental, Manual of Instruction	A.O.	204	1892
Telegraphs, Military, Regulations for	A.O.	369	1889
*Trumpet and Bugle Sounds	A.O.	245	1888
Valise Equipment (Original Pattern), Instructions for Fitting	G.O.	55	1885
Valise Equipment (1882 Pattern), Instructions for Fitting	A.O.	313	1890
Valise Equipment (1888 Pattern), Instructions for Fitting	A.O.	217	1892
*Veterinary Regulations	A.C.	237	1882
,, Department, Admission to, &c. ..	A.O.	265	1891
†Volunteer Regulations	A.O.	19	1893
*Yeomanry Cavalry Regulations	A.O.	298	1889

* Under revision. † Annual edition.

NAMES OF MEMBERS who joined the Institution between the 1st January and the 31st March, 1893.

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Carter, Arthur W., Lieut. R.N.
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Bennett, C. D., Sub.-Lieut. R.N.R.
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Ferrar, H. M., Capt. R.A.
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Warrington, T. R., Capt. 14th Middx. Vol. Rif.
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Crawford, G. A., Col. late R.A.
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Ward, A., Lieut. Ind. S.C.

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Fawkes, M., Lt. Col. late R. Irish Fus.
Disney-Roebuck, T. H. A., Lt.-Col. D. of Corn. L.I.
Holloway, E. L., Capt. Ind. S.C.
Holmes, G. V., Lieut. Ind. S.C.
Mears, A., Lieut. Ind. S.C.
Groves, J. M. S., Lieut. Ind. S.C.
Holmes, T. de B., Major 26th Middx. Vol. Rif.
Webb, Vernon R., Lieut. R.N. (retd.).
Bosworth, W. J., Capt. 3rd Middx. Vol. Arty.
Robinson, Thomas, Surg.-Lt.-Col. Ind. Med. Service.
Bird, S., Capt. Royal Fus.
Anderson, E. B., Capt. R.A.
Oxley, R. S., Lieut. K.'s R. Rif. Corps.
Dowding, H. H. H., Lieut. Essex Regt.
Gough, Sir Hugh H., V.C., K.C.B., Lt.-Gen. Ind. S.C.
Johnson, T. S., Lieut. Ind. S.C.
Luck, E. J., Lieut. late Sur. Mil.
Coates, H. W. U., Capt. Bed. Regt.
Wakefield, W., M.D., Surgeon late 6th Drag. Gds.
Davies, E. C., Capt. Ceylon Vols.
Morgan, R. H., Capt. Ceylon Vols.
Van Cuylenberg, H., Capt. Ceylon Vols.
Leechman, C. A., Capt. Ceylon Vols.
Waller, W. R., Capt. Ceylon Vols.
Campbell, T. B., Capt. Ceylon Vols.
Frazer, Gordon, Lieut. Ceylon Vols.
Jayatileke, C. E., Lieut. Ceylon Vols.
Oxley, J. S., Lieut. 2nd V.B. R. Sussex Regt.
Holland, E. C. F., Major R.A.
Paton, G., C.M.G., Maj.-Gen. late S. Wales Bord.
Findlay, N. D., Capt. R.A.
Peters, J. W. P., Capt. 7th Drag. Gds.
Morgan, Frederick R. W., Lieut. R.N.
Hewett, E. O., C.M.G., Maj.-Gen. R.E.
Abdy, A. J., Capt. R.A.
Williams, Harry, Ch. Insp. of Machinery R.N. (retd.).
Hamilton, L. H., Lieut. Colds. Gds.